DIGITAL ENABLEMENT
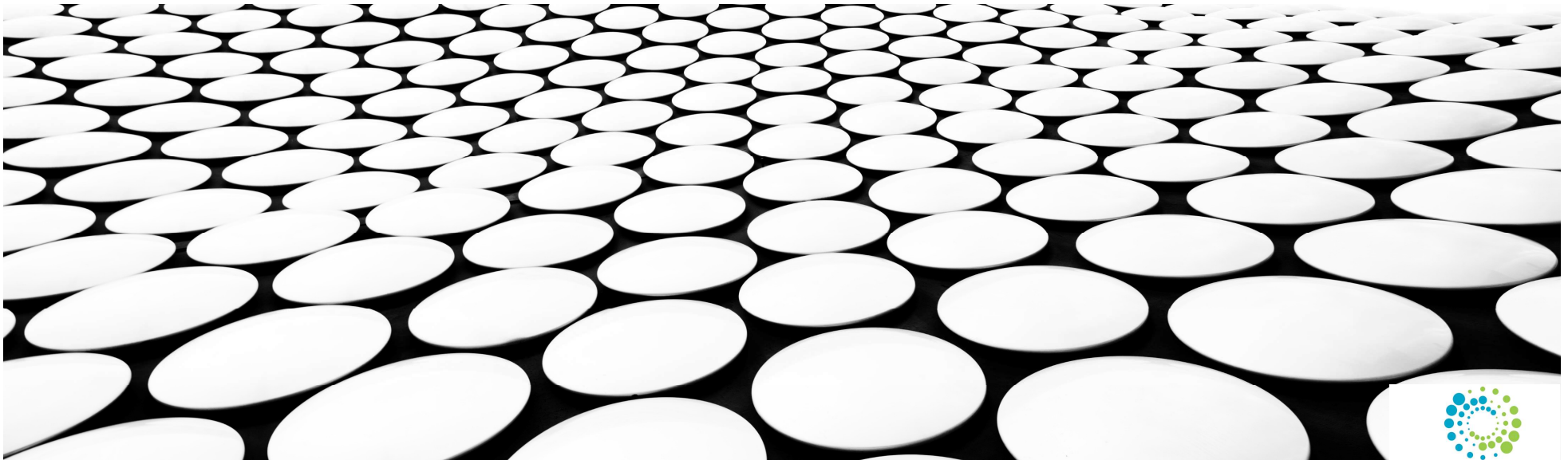
DIGITALLY OPTIMIZED ASSETS IMPROVE SAFETY, INCREASE RELIABILITY AND OPTIMIZE COST PERFORMANCE

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Digital Enablement Overview

The '**Digitally Enablement of Assets (DEA)'** program can enable employees to improve personal and process safety, increase reliability and optimize cost performance of our assets.

By transforming the workforce with new competencies, and introducing new (business) processes, technology / tools, **the DEA program can provide people with the reliable data that they need.** With that, **most value of the existing assets in terms of cost, reliability, and production can be achieved**.

The challenge

Today, most of the operation, maintenance and engineering/reliability employees lack the digital capabilities that are needed to make effective decisions to fully optimize asset performance.

A consistent approach is required by:
- building personnel competencies,
- applying all standards & business processes,
- providing access to right technology/tools and
- accurate data on-time
to make data driven decisions.

Digital Enablement Focus on Process, Technology, Data & People

The success of the DEA program depends on how an organization adopts Process, Technology, Data and engages their People.

Key Changes to address

- **Business Process**
  - Simplify & standardize 'one business process' for all users.
  - Use standardized libraries (e.g., maintenance, inspection strategy libraries)
  - Standardize stewarding & benchmarking

- **Technology**
  - Right technology/ tool
  - 'One tool' for all users. Also, focus on 'out-of-box (no customization)' solution.
  - Integrate with ERP application (e.g., SAP) where it makes sense
  - Mobile capabilities enablement (e.g., iPhone & iPad).

- **Data**
  - Cleanse data before migration. Only good quality data can be used for data-driven decisions.

- **People**
  - A comprehensive change management plan to transform the workforce to meet the needs of the future

Focus Areas - Asset Information Management

The asset information digitalization journey seeks to **standardize and modernize how we manage and access 'asset information'** content across the enterprise. The focus is on empowering our people to drive greater value from our asset information by providing simplified processes, tools, and technology to allow them to make decisions faster.

Key Initiatives

- **Asset Lifecycle Information Management (ALIM)**

- **Engineering Design Tools**: Moving asset information from documents and spreadsheets to databases such as Mechanical, Electrical & Instrument data sheets and piping material specifications for ease of use and sustainment

- **Engineering Data Warehouse**: Single point of truth for all asset information engineering data.

Focus Areas - Asset Performance Management

Asset Performance Management (APM) seeks to strengthen reliability culture across the enterprise. The focus is on empowering people to drive greater value from their interactions with assets by providing processes, tools, and technology. The goal is to improve asset reliability, minimize downtime, and decrease maintenance costs.

Key Initiatives

- **Asset Management**: to enable reactive to proactive maintenance using standardized business process, standardized asset(maintenance) strategies and standardized digital application.
- **Mechanical Integrity (Inspection Management)**: to enable standardized inspection management process and optimize inspection activities using standardized inspection process, and standardized digital application.
    - One digital tool for 'Asset Management' & 'Mechanical Integrity (Inspection)' and integrating the digital tool with ERP system (such as SAP) can enhance work execution efficiency.
- **Optimize Asset Performance**: to enable IT-OT infrastructure to develop predictive modeling using big data, machine learning, advanced analytics to predict failures to avoid catastrophic losses. Predictive model development focus on critical assets only.

Focus Areas - Connected Worker

'Connected Worker' enable field workers with digital tools that they require to access the information they need, where they need it, and the ability to share information from the field with others in real-time.

Key Initiatives

- **Operator Round:** Real-time capture of data and information from the field that can be relayed to the right folks for faster decisions.

- **Digital Permitting** : Enables a new digital capability for operational control of work activities and promotes the standardization of Safe Work Practices. This ultimately improves hazard management, safety & productivity.

Focus Areas - Advanced Analytics, Production Optimization

The **Production Optimization** utilizes digital capabilities and analytics that maximize production performance. This is focused on providing operations employees a digital process model of a physical asset.

Key Initiatives

- **Process Digital Twin (PDT)** : Real-time virtual process representation of a unit. Advanced process monitoring, process fault detection and real-time optimization.

- **Plant Optimization** through advanced digital technologies

- **Advanced Analytics**

Note: Recommendation would be to consider in the next phase of the digital journey.

What Global Asset Care can do

Bring 'end-to-end' (from initiation to sustainment) digital transformation experiences gained through working in one of the leading Canadian Oil & GAS integrated company

- Assessment
- Building business cases
- Roadmap
- Execution (validate through pilot, scale up to enterprise rollout)
- Governance structure
- Change Management
- Stewardship
- Sustainment

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