NOVEMBER 2022

AVEVA™ Value Chain Optimization

Roadmap and Vision

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Oil and Gas Downstream Industry Current Scenario

Significant changes on workplace, workforce and market imperatives

Market Dynamics

Less predictable market

Oil price more volatile, balance between Nuclear, Conventional, Renewables changes rapidly

Complexity

More JVs, new processes to monetize gas, Increasing regulation

Workforce

Generational Changes; Knowledge Management

Socio-Political pressure

Carbon neutrality, regulations, …

Tightened Margins

Reduced oil and product prices, smaller “spread” between supply and output

Business Challenges

Better Visibility, Rapid Response

Improved return on capital

Process, Operational Efficiencies & Cost Out

Risk Management

New Business Models

Value Chain Optimization

Technology Trends

Cloud and Continuous Delivery

Digital Twin

Big Data & Analytics

AI and High-Performance Computing

Cyber Security

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Exceptional times

- Post-pandemic demand volatility
- Supply disruptions
- Limited storage capacity
- Price volatility
- Drastic changes in optionality
- Wide-ranging energy transition objectives

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Digital Agility Forges Digital Resilience

"Oil and gas companies and their suppliers need to have capabilities in place to enable greater resiliency and adaptability as they face disruptive market environments."

-IDC Report

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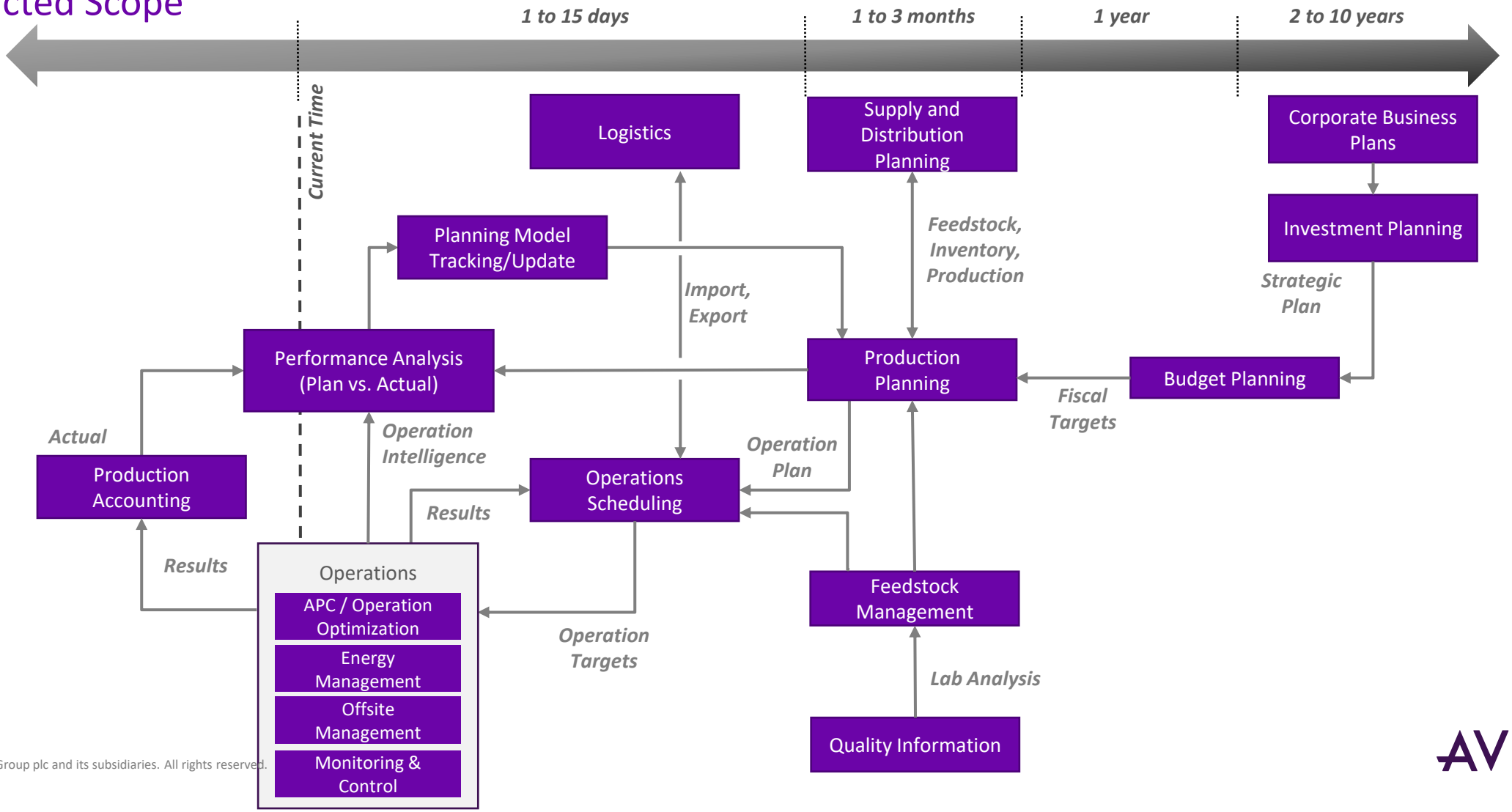
Refining and Petrochemical Value Chain

Abstracted Scope



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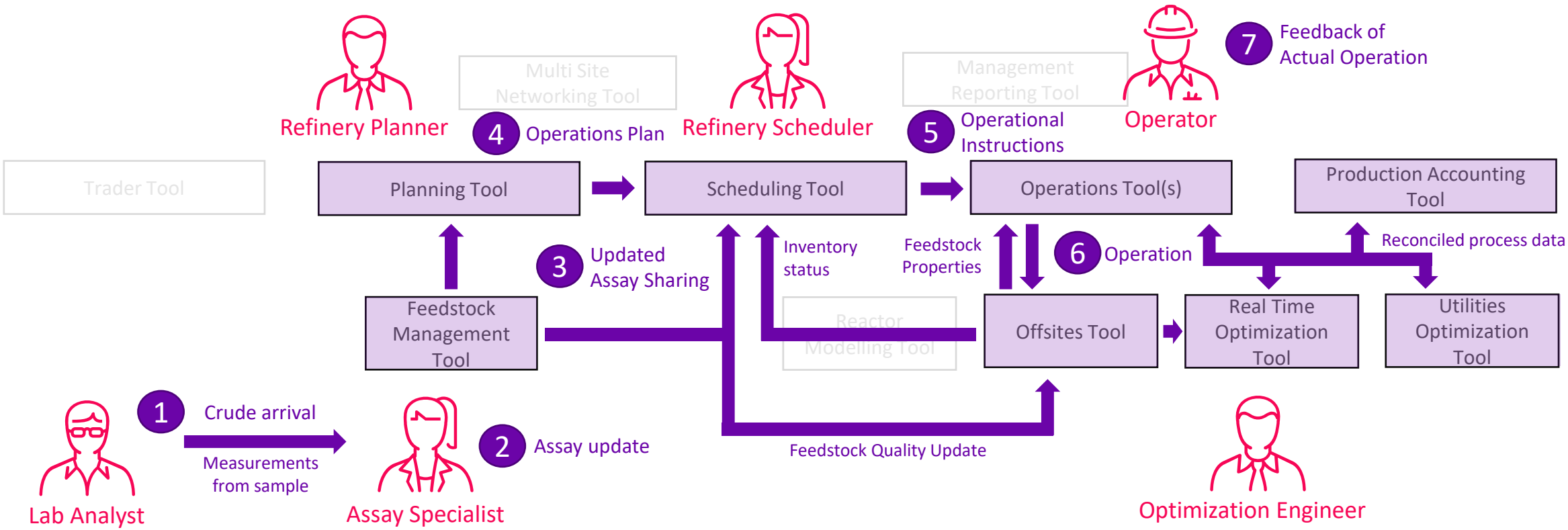
Real Workflows - Oil and Gas Downstream Value Chain

Example: The operations execution workflow



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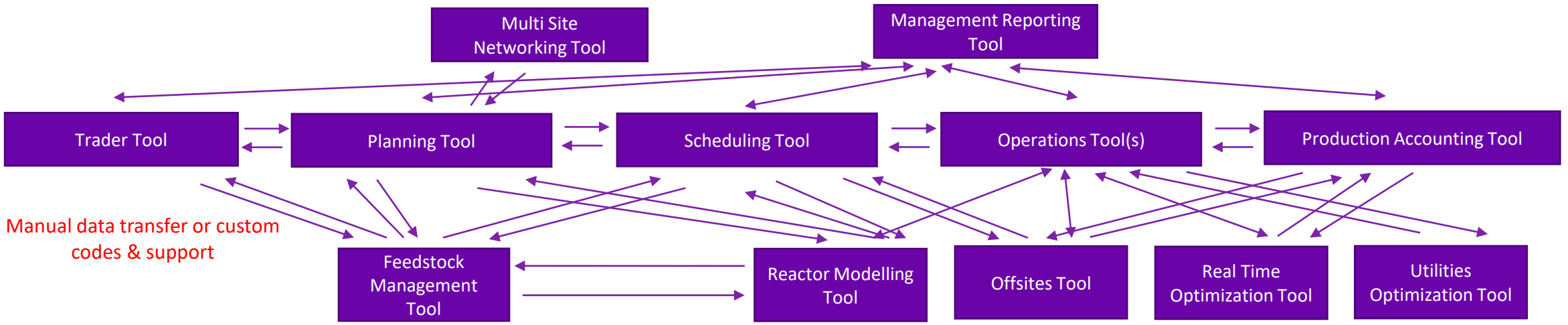
Downstream O&G Value Chain

Real Workflows: Legacy of Point Solutions



Value Leaks & Lost Opportunities	Low Transparency	Low Consistency	High Tool Dependency	Lack of Agility	Low Accuracy	High Maintenance

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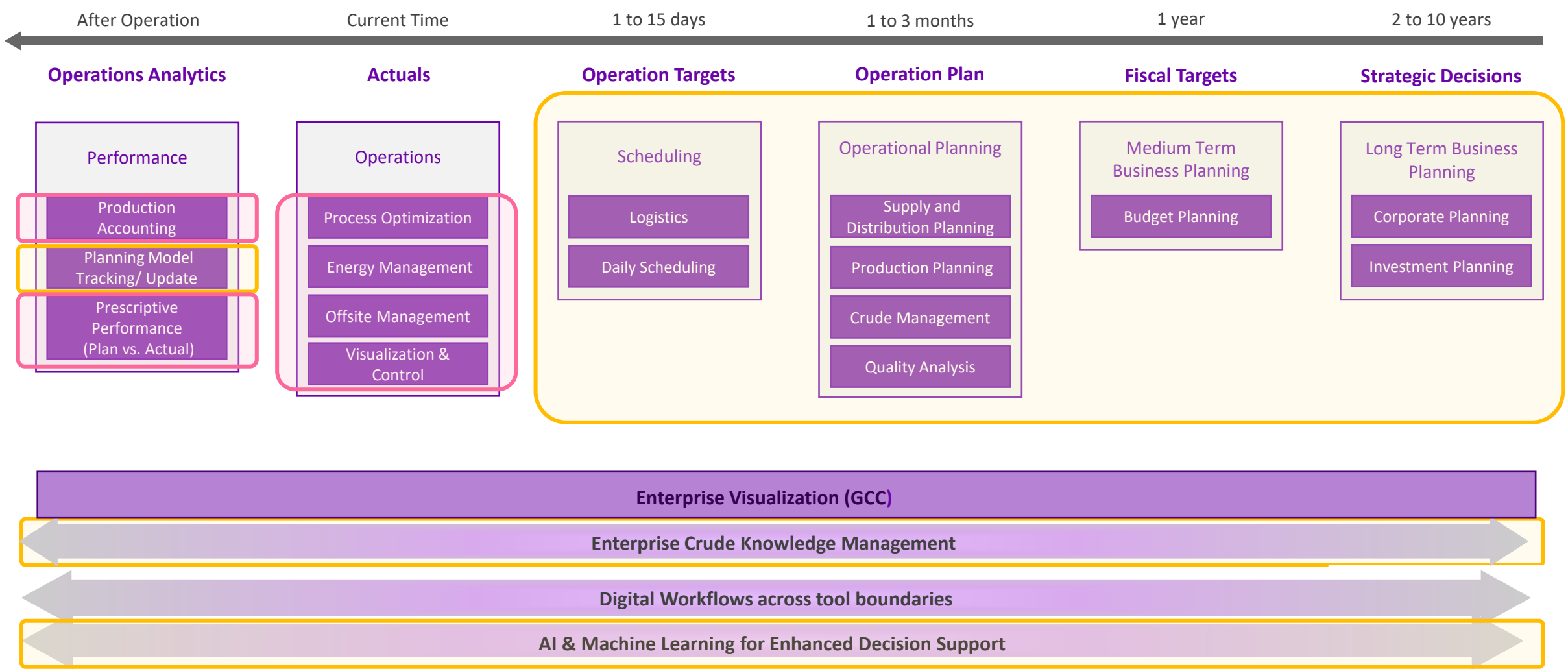
Value Chain Optimization Vision

Digital Twin (Process)

Digital Twin (Supply Chain)

Enable Enterprise Collaboration & Agility to Maximize Profitability Across the Value Chain

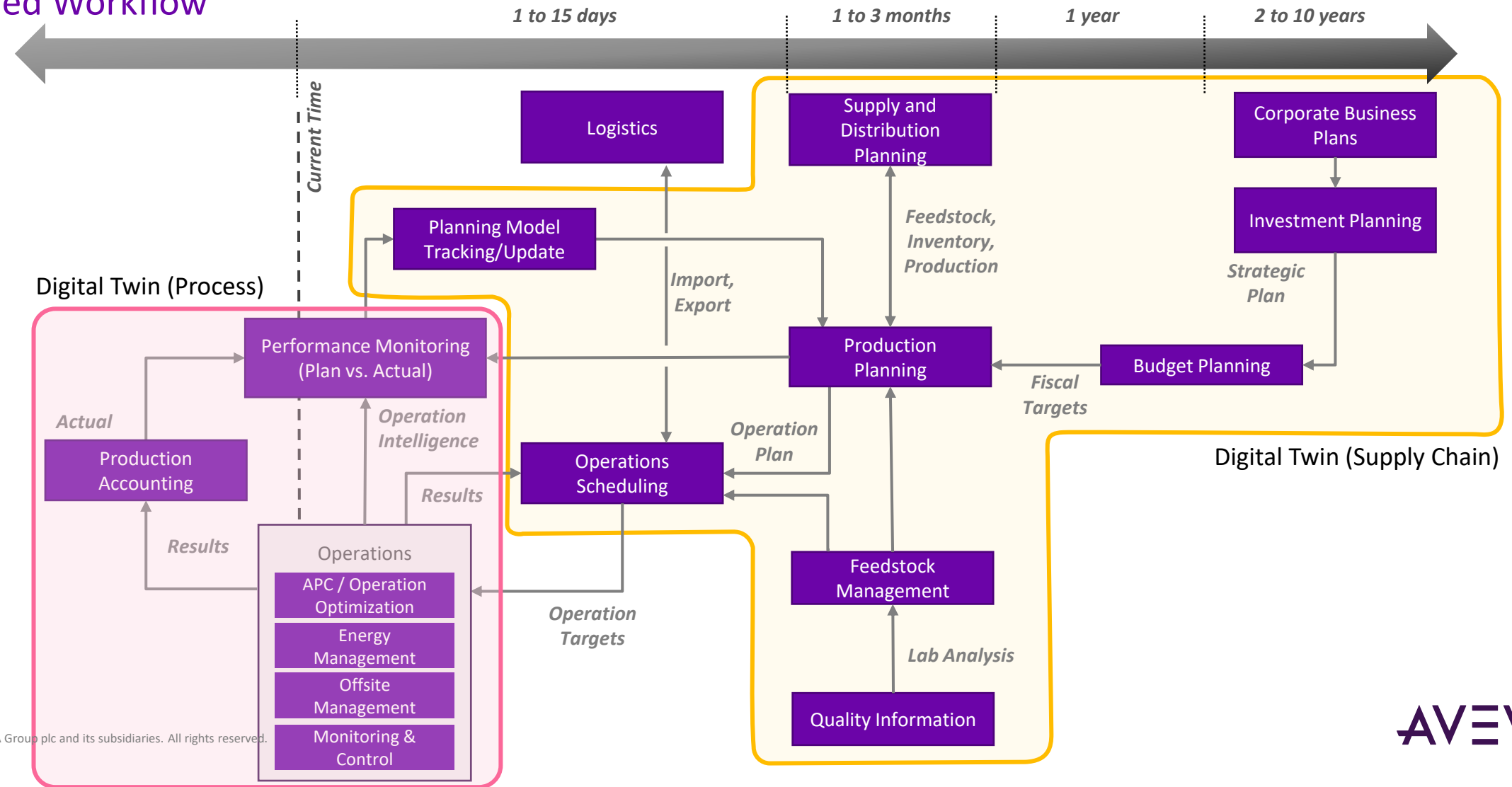


ONE AVEVA

Contribution to cloud platform

Refining and Petrochemical Value Chain

Detailed Workflow



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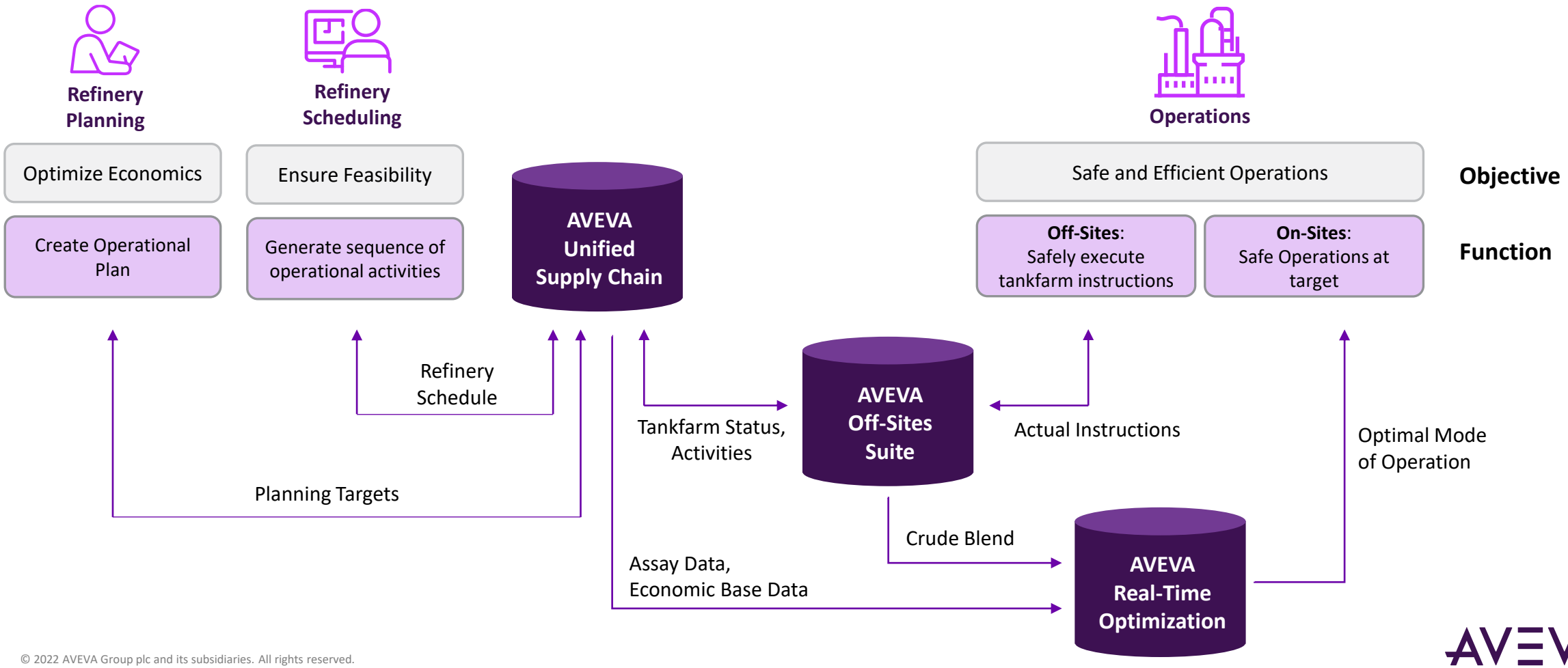
New workflows – Example: Operations & Optimization

Closing the gap between model-based planning & scheduling and real time-based operations



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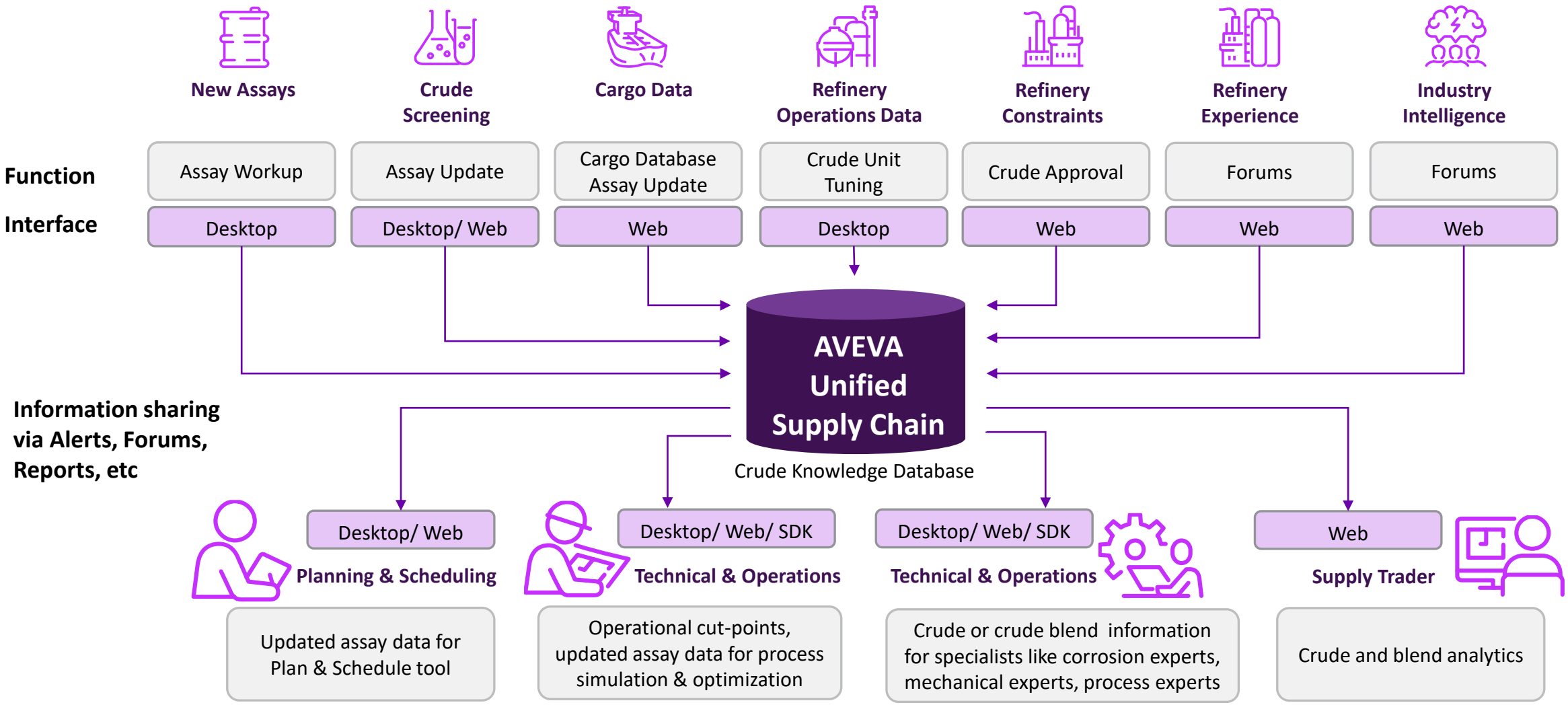
New workflows – Example: Crude Management



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BP – Oil &Gas Downstream

Business revolution with AVEVA's solution in the cloud

- Goals
  - Simplify and standardize Oil & Gas downstream supply chain management
  - Enhance data management and transparency to improve decision-making
  - Reduce IT cost of ownership and increase agility
- Challenges
  - Lack of transparency and duplication of efforts across the supply chain
  - Inability to make quick decisions that could benefit the business
  - Disconnected processes and tools — multiple local planning solutions
- Results
  - Significant margin improvements through an improved refinery optimization process
  - More robust and lower risk plans — ability to run complex models that weren't possible before
  - Earlier decisions and communications on feedstock purchasing and planning operations
  - Standardization of data and better transparency: all teams and different sites are using the most up-to-date information, sharing best practices for modelling, analyses, and business processes.
  - BP is no longer limited by technology, but rather empowered by it

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View complete story on AVEVA's website!

ADNOC – Multiple companies on One Enterprise Platform to Achieve Max Profit

Smarter and faster decision-making through digital command centre

- Challenges
  - Long cycle to produce production plans, inconsistency in reporting, location performance and discrepancy in transfer measurement between plants
  - Reduce “value leaks” and improve enterprise visibility on operations, equipment, energy usage, and production information
- Solution
  - Panorama Digital Command Center: single source of accurate information across ADNOC’s value chain, powered by AVEVA leading technology
  - Spiral Unified Supply Chain Management model of all ADNOC subsidiaries to enable enterprise optimization across the entire value chain
  - Feedstock characterization, production planning with integrated analytics and supply and distribution network optimization
- Results
  - Panorama provides access information from one central location, enabling a “single version of the truth” via dashboards viewable from Pods and the 150ft x 10ft video wall centerpiece
  - Enterprise value chain optimization enabling collaboration and agile strategic decision making
  - $60-100 Million benefits in optimization in a single run of the integrated production planning model

Source:
AVEVA’s Unified Event 2018 Presentation / ADNOC customer success story on AVEVA’s website

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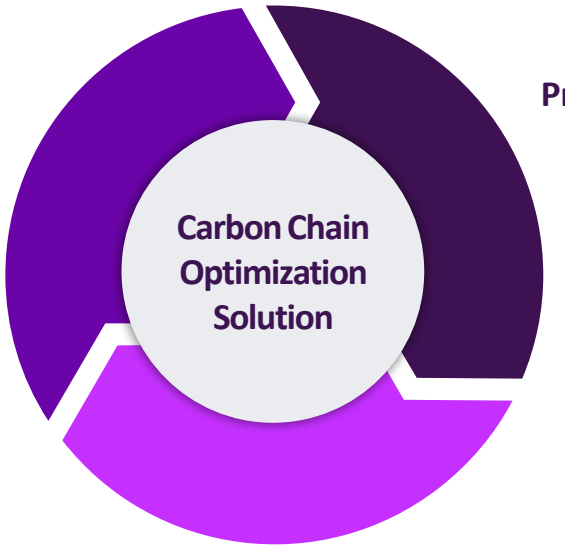
Uncover Profitable Pathways to Net Zero

AVEVA Value Chain Optimization Sustainability and Energy Transition use cases are already helping customers in their Net Zero journeys

Carbon Chain Optimization solution helps prioritize activities and initiatives and sets the course



Carbon Aware Planning

Economic investments and operating plans considering scope 1,2 and 3 emissions

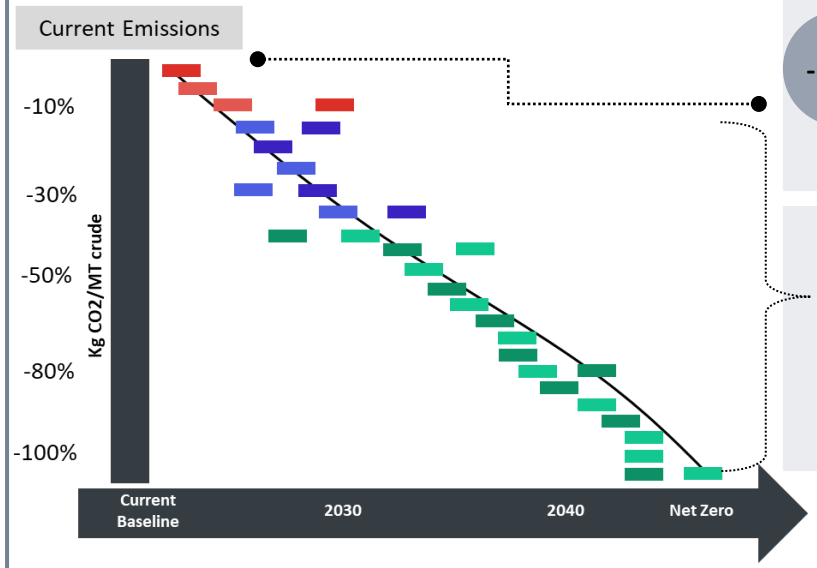
Process Digital Twin Based Energy & Emissions Management

Calculate energy and emission reduction potential

Unified Production & Emissions Accounting

Align production and emissions accounting to baseline and track results into your Sustainability Reporting

Carbon Navigate through multiple pathways to Net Zero



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Initial Step
Efficiency-driven benefits from the Solution
Reduction potential based on current available technologies prioritizes next steps

Net Zero Journey
CCO Solution as the Compass for Net Zero Journey
Configuration updated as new technologies evolve giving updated reduction potential and guiding on the next steps. Continues to deliver on efficiency

Solution enables PDCA cycles (plan-do-check-act):

Generating Plan and Targets

Monitoring & Gap Analysis

Prioritize & Act

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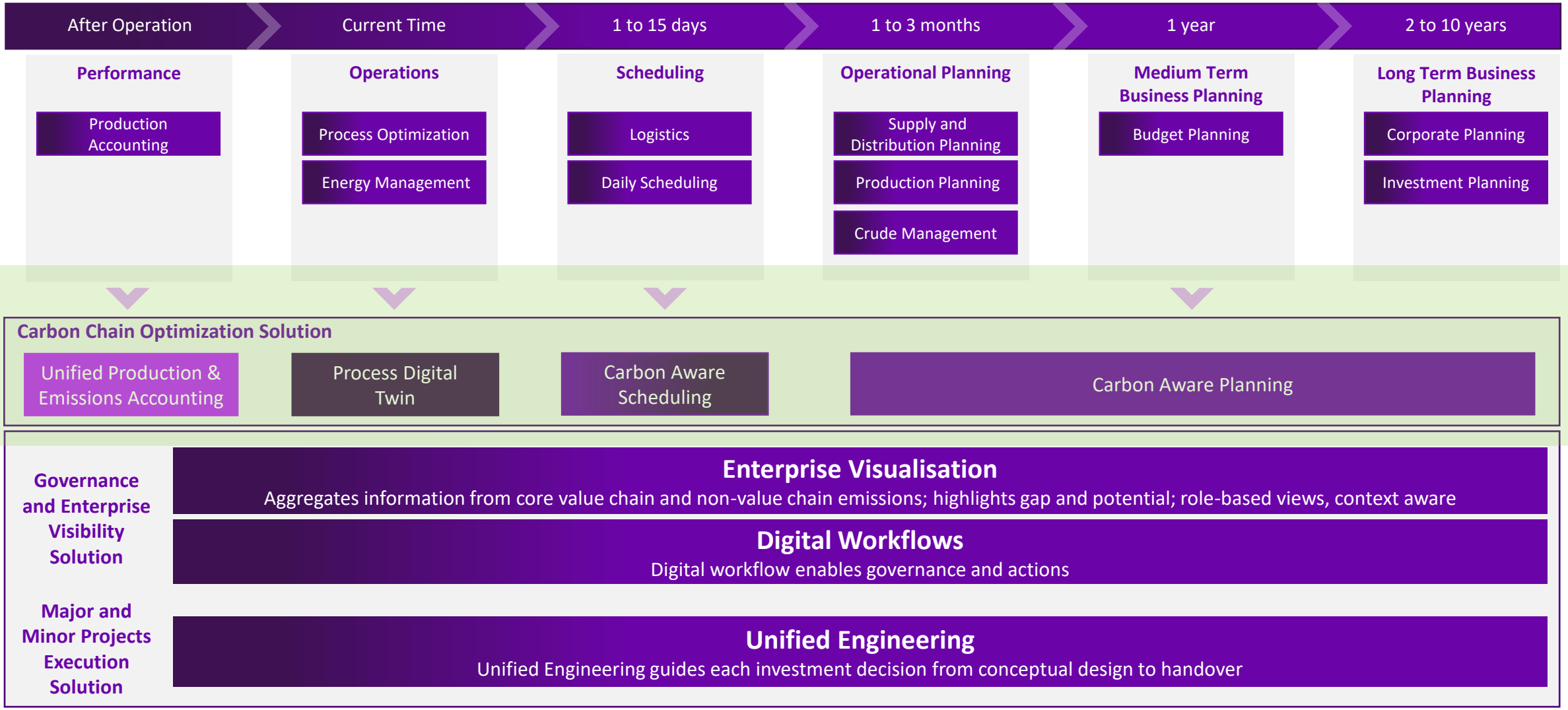
AVEVA's Net Zero Framework



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Case study published May 2022

www.aveva.com

CUSTOMER CASE STUDY

bp sets up commercial CO_2 emission modeling for refinery operations using AVEVA supply chain optimization

bp - www.bp.com
Oil and Gas

Goals

- Leverage advanced cloud computing and automation for a standardized approach across refinery operations, to deploy models faster and sustainably
- Introduce the ability to model CO_2 emissions within each bp-operated refinery to provide new insights to track and manage CO_2 emissions

Challenges

- Providing a single, global tool and data set to align heritage work practices and provide improved planning performance with sharing of expertise and visibility of results across the refineries
- Standardizing modeling of CO_2 emissions globally across the network of bp-operated refineries

Solution

- AVEVA™ Unified Supply Chain

Results

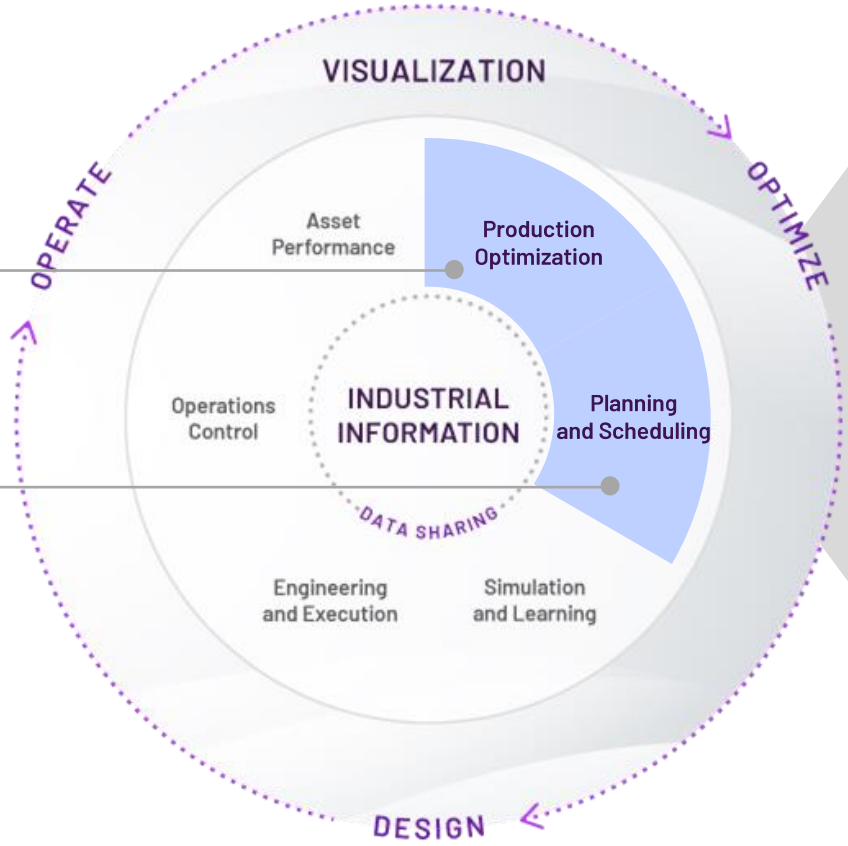
- bp's refineries have implemented an improved and easy-to-use planning tool, with the capability to model many different scenarios and return results at pace
- Simplified decision-making that can be performed faster using one optimization tool, delivering competitive advantage
- Margin improvements through improved decision-making capabilities
- Improved CO_2 emissions modeling capabilities that can be used to plan, test and evaluate strategies for carbon reduction

Optimize your value chain to capture market opportunities

Unified system to enable enterprise agility and collaboration across supply chain & operations

Process Optimization
Production Accounting
Advanced Process Control (APC)
Off-Sites Management

Unified Supply Chain
- Assay
- Plan & Network
- Schedule & AI Assistant
- Process Model Generator



Roadmap Drivers

- Resilience & Agility through Enterprise Integration
- Enhanced Cloud Experience w/ AI Infusion & Analytics
- Enable Sustainability & Energy Minimization

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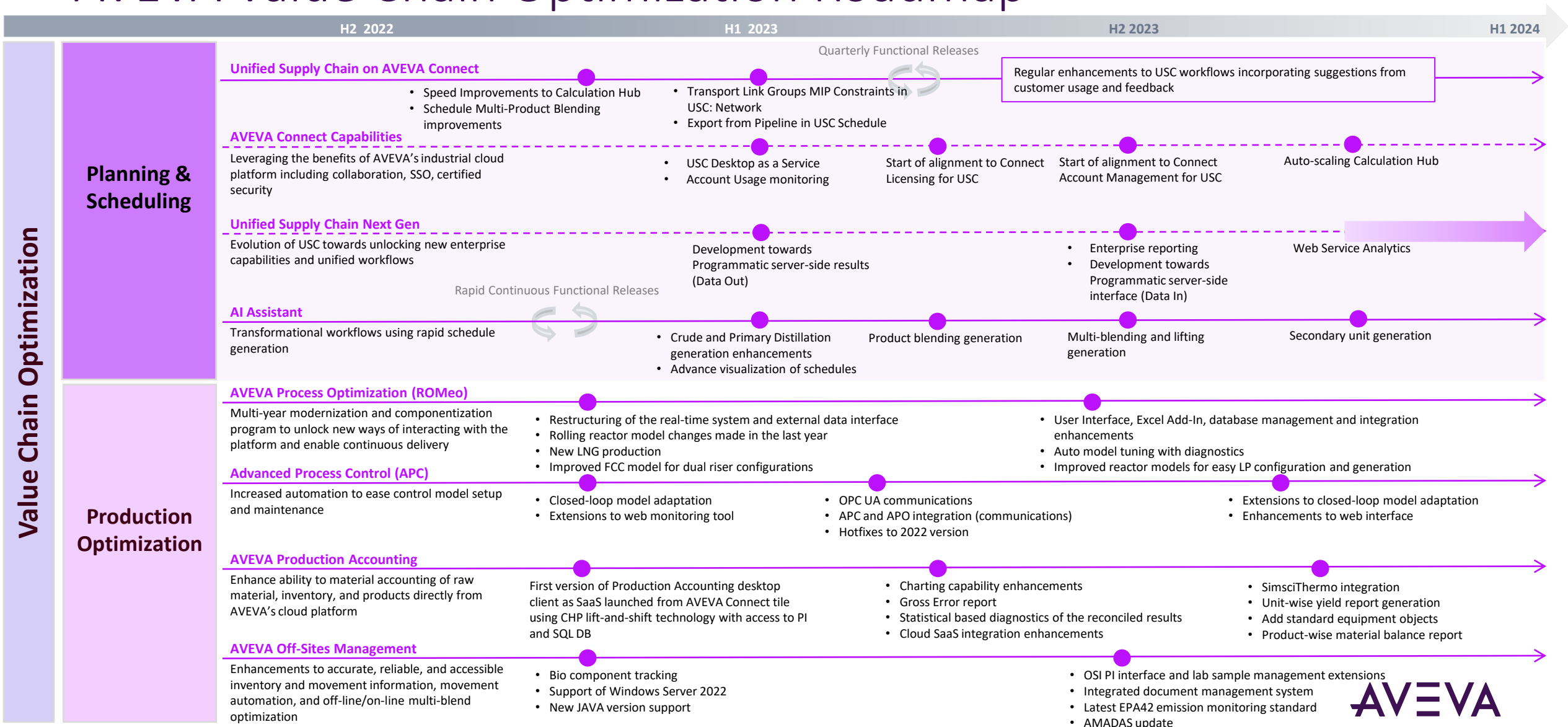
AVEVA Value Chain Optimization Roadmap



Calendar Dates Subject to Change

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AVEVA's Business Value

Value Chain Optimization

Business process improvement

Break down silos

Better decision making

Increase revenue and margin

While Helping to Achieve Sustainability Objectives

AVEVA™

Thank You

- Contact for more information

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Questions?

Please wait for the microphone.

State your name and company.

Please remember to…

Navigate to this session in the mobile app to complete the survey.

Thank you!

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ABOUT AVEVA

AVEVA is a global leader in industrial software, sparking ingenuity to drive responsible use of the world's resources. The company's secure industrial cloud platform and applications enable businesses to harness the power of their information and improve collaboration with customers, suppliers and partners.

Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. With operations around the globe, we are headquartered in Cambridge, UK and listed on the London Stock Exchange's FTSE 100.

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