

17 MAY 2022

AVEVA Value Chain Optimization

Sustainability and Agility

Presented by: Freddy Garces



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

Digital Agility Forges Digital Resilience



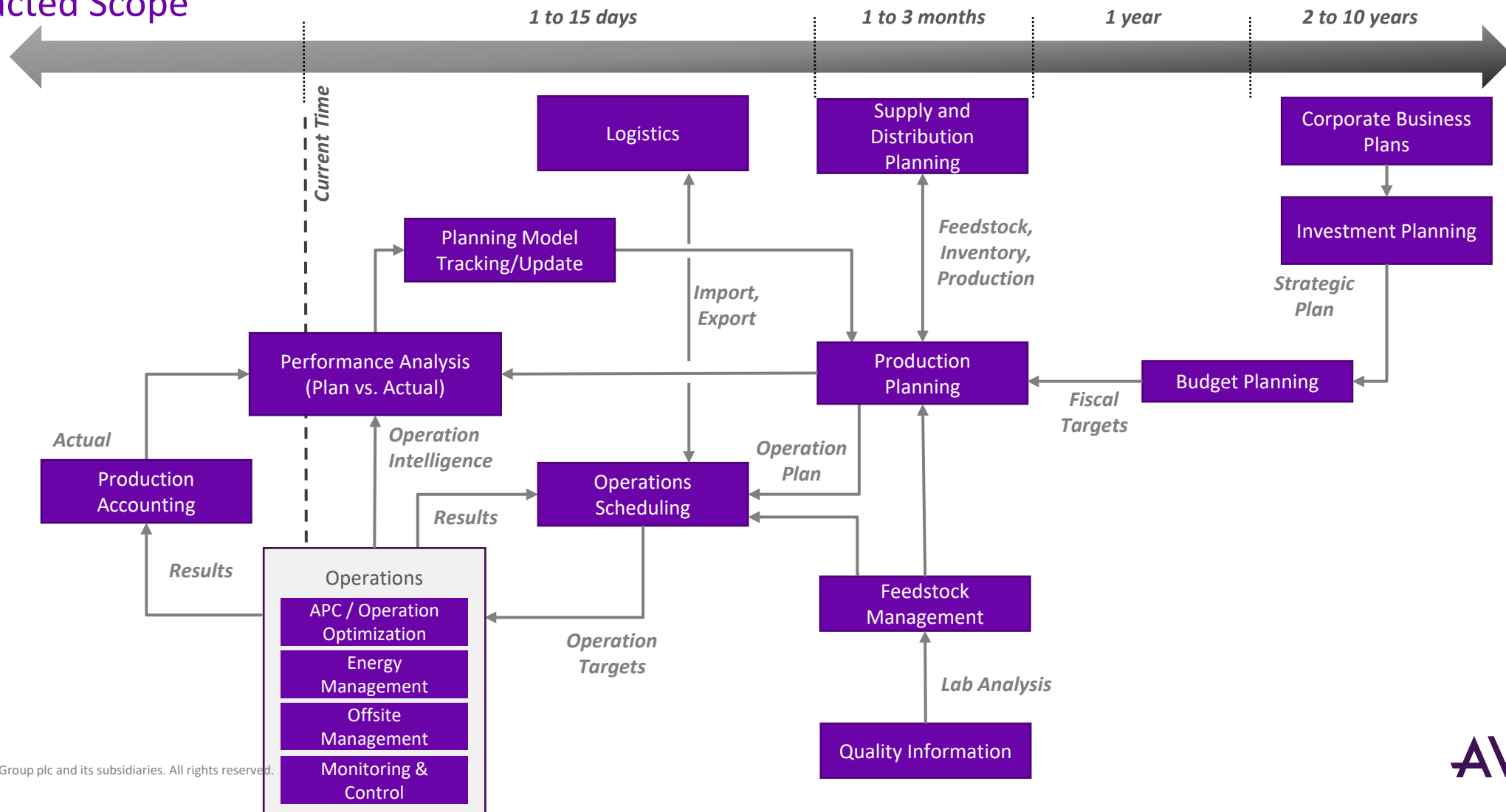
"Oil and gas companies and their suppliers need to have capabilities in place to enable greater resiliency and adaptability as they face disruptive market environments."



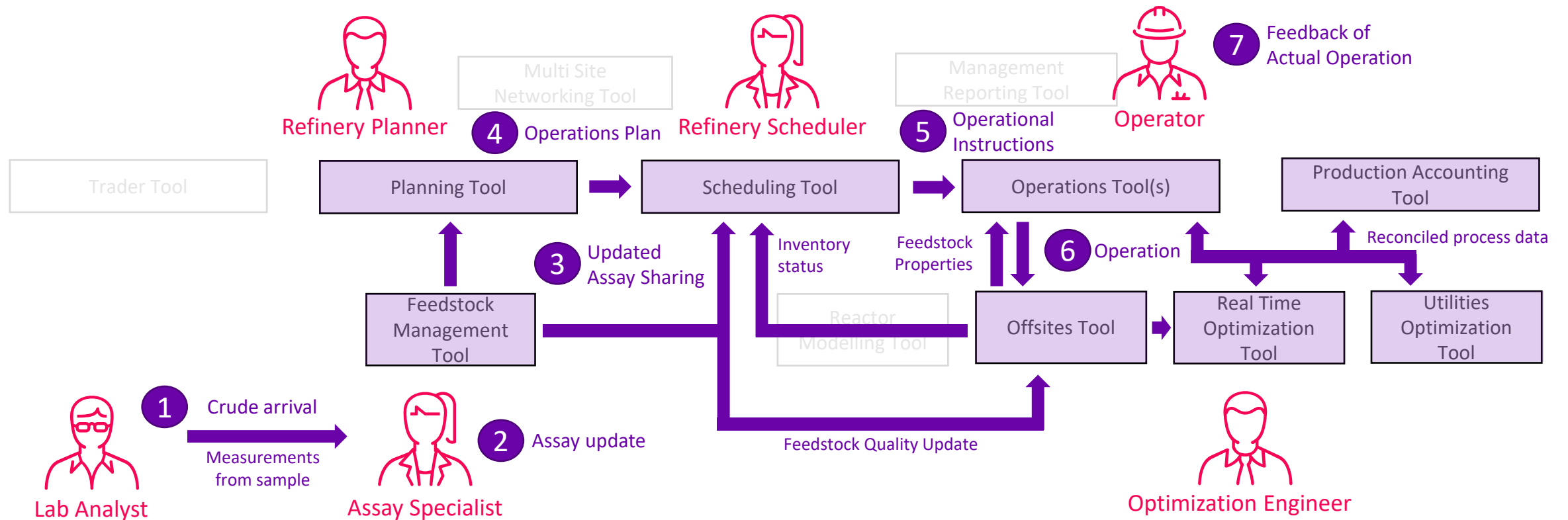
-IDC Report

Refining and Petrochemical Value Chain

Abstracted Scope

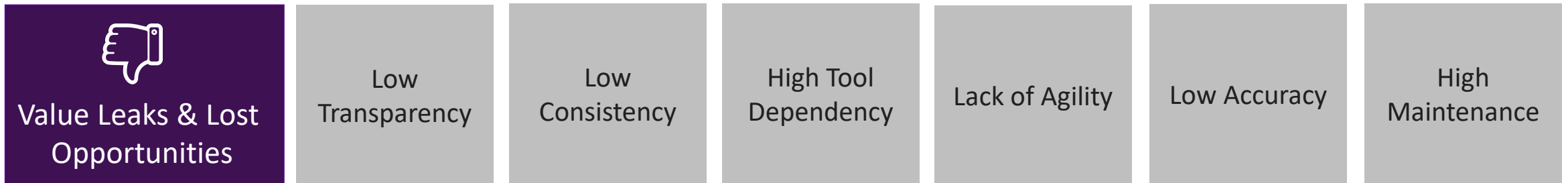
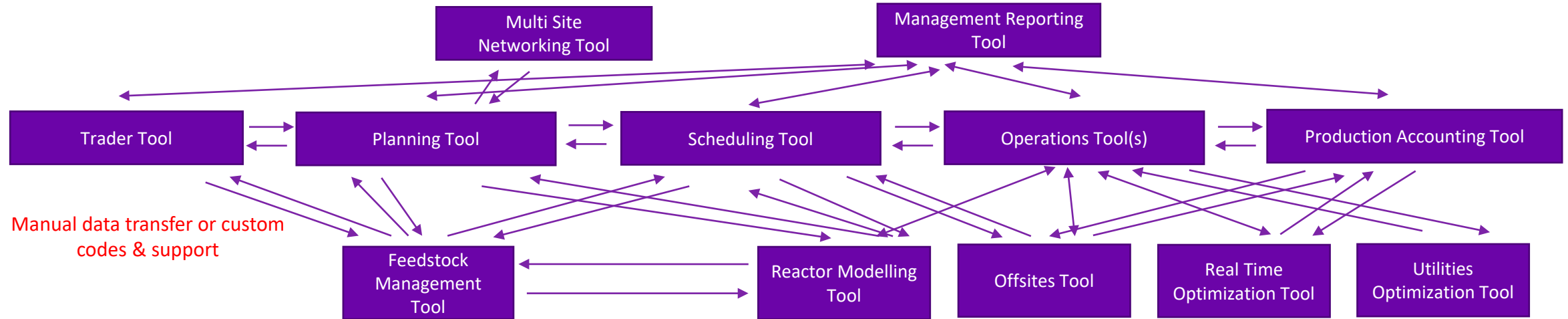


Example: The operations execution workflow



Downstream O&G Value Chain

Real Workflows: Legacy of Point Solutions

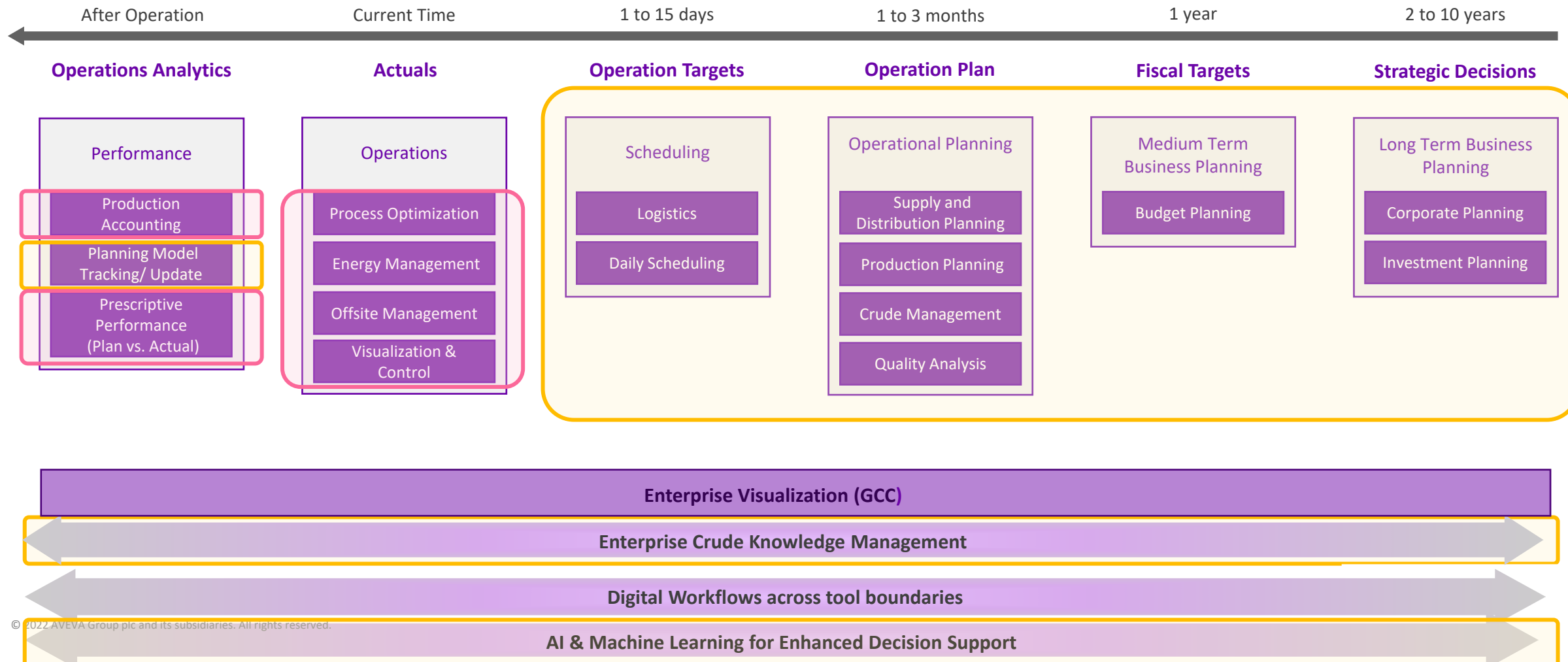


Value Chain Optimization Vision

Digital Twin
(Process)

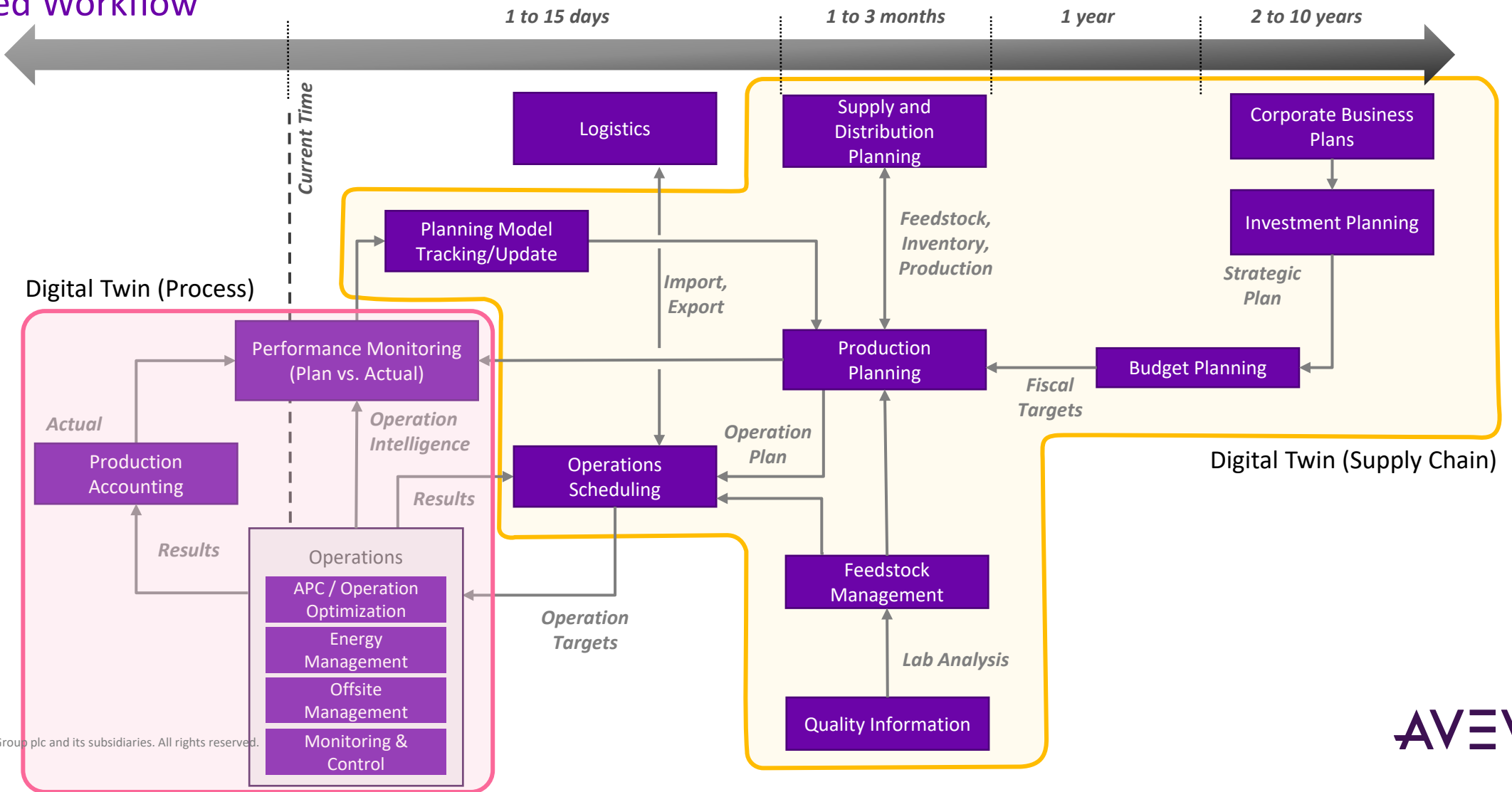
Digital Twin
(Supply Chain)

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



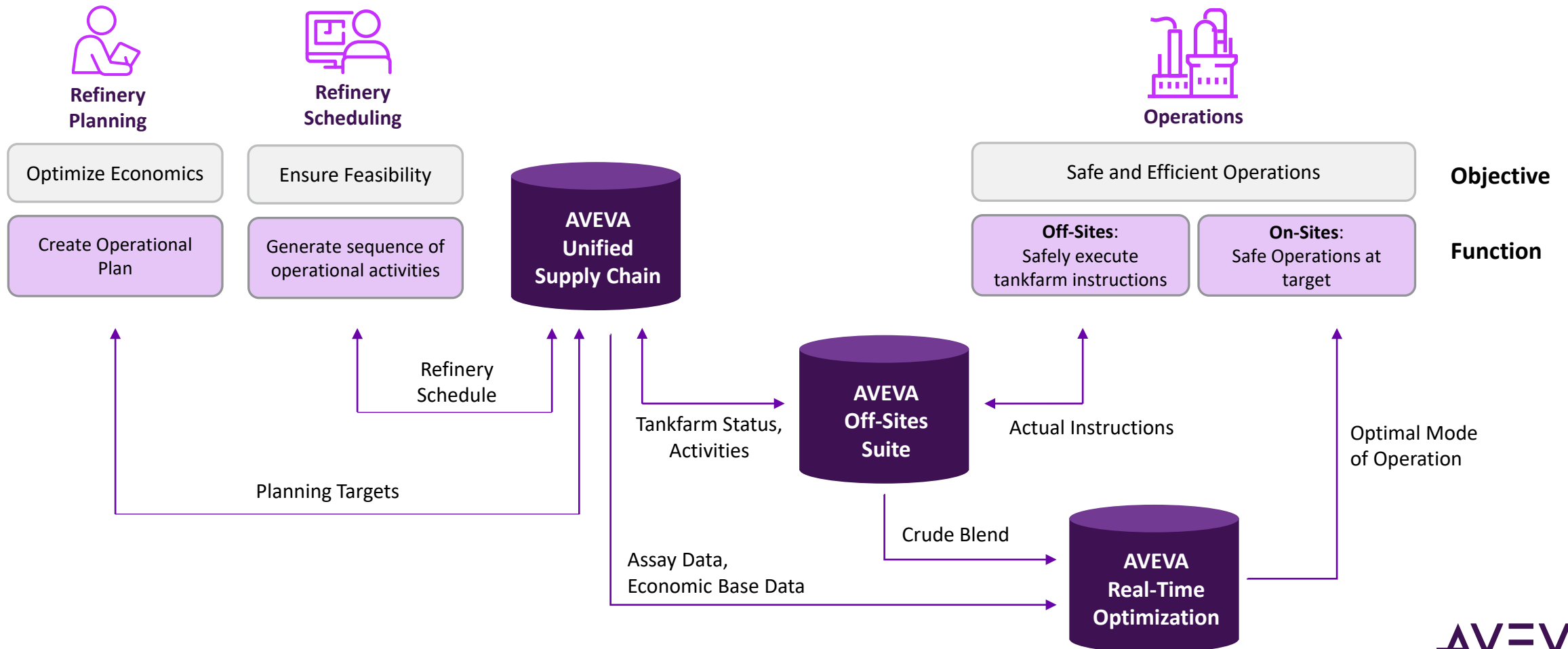
Refining and Petrochemical Value Chain

Detailed Workflow

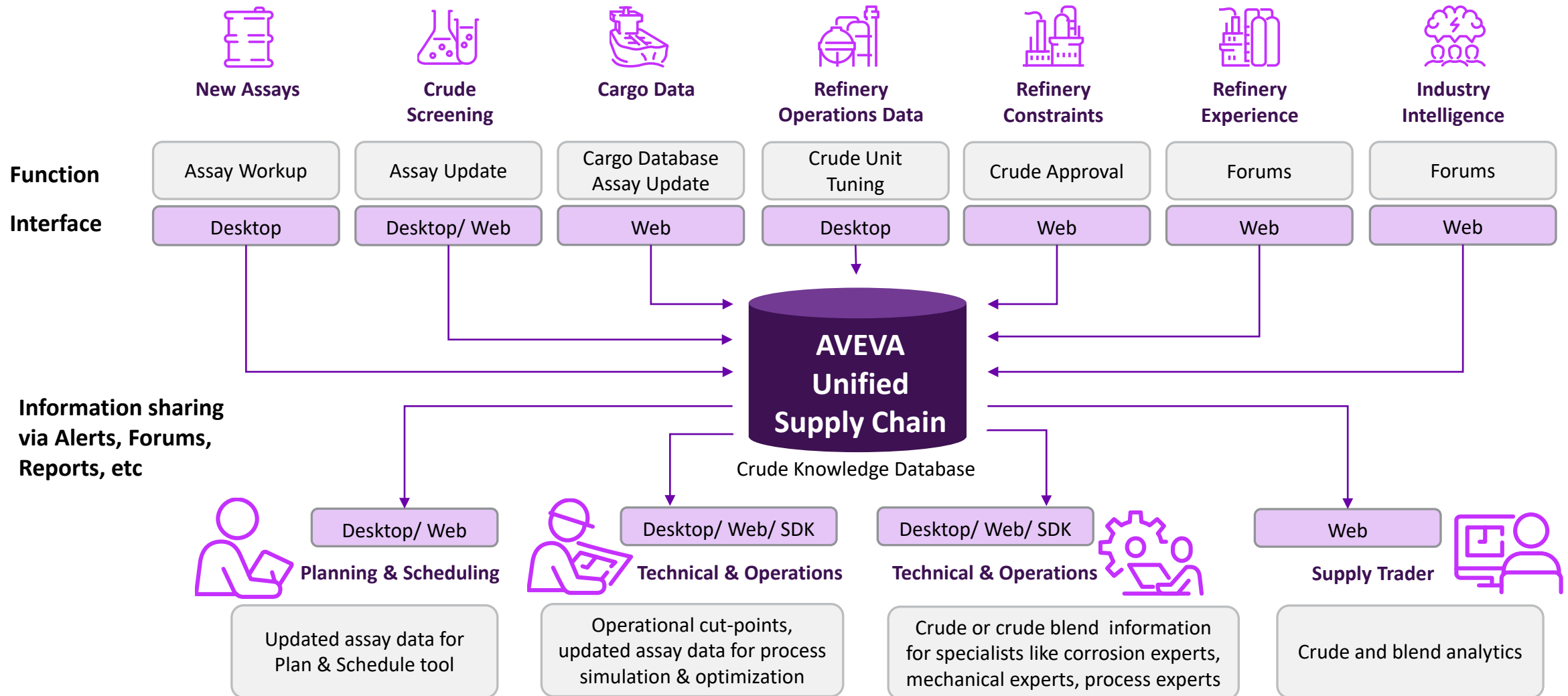


New workflows – Example: Operations & Optimization

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



New workflows – Example: Crude Management



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

“If you could do in minutes what previously took a day, what would you do? AVEVA's technology in the cloud is creating time, and BP's responsibility is what to do with the time saved. This is revolutionary to our business.”

Claire Dickson, CIO of Downstream



Earlier decisions

2 days → 2 hours
on planning & crude purchase



Improved calculation speed
7 hours → 3 min
to run planning model



Transparency & collaboration
Instant sharing
of plans across enterprise

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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

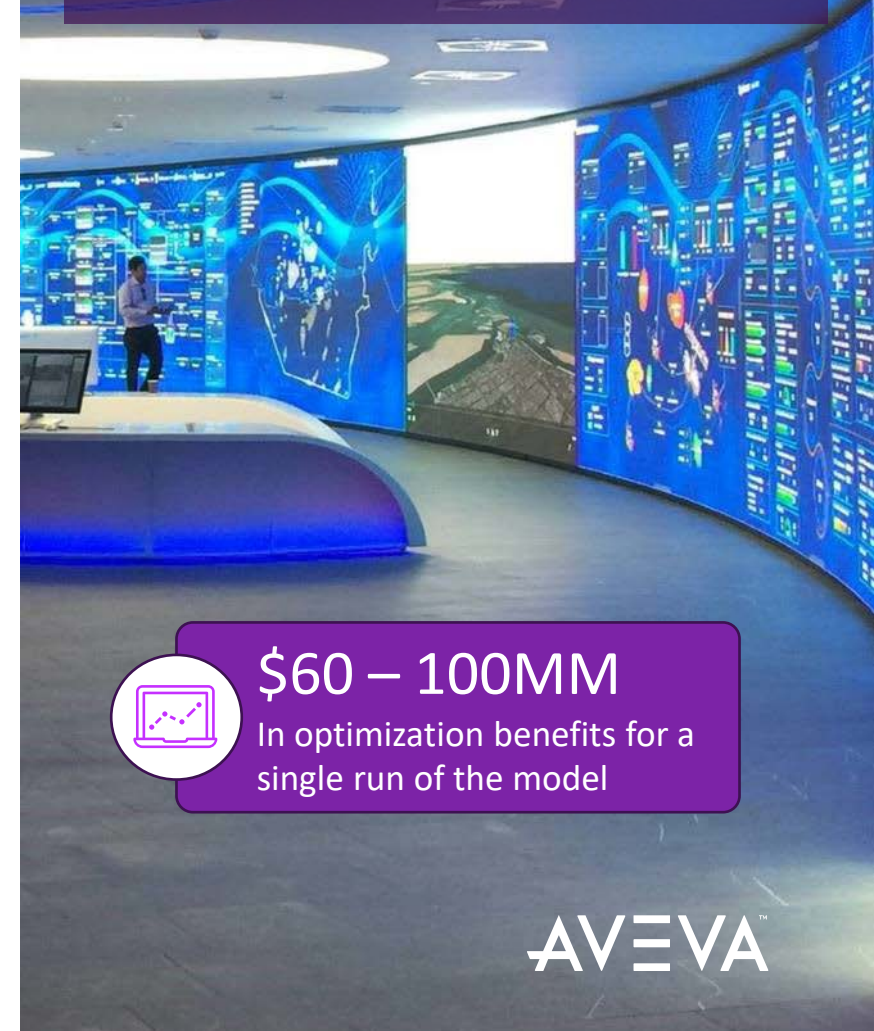
- Results

- 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](#)

“ADNOC’s Integrated Production Planning model allows to run techno-economic optimization scenarios that better support strategic decision-making processes and to further identify internal/ external potential market opportunities for ADNOC.”



\$60 – 100MM

In optimization benefits for a single run of the model

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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

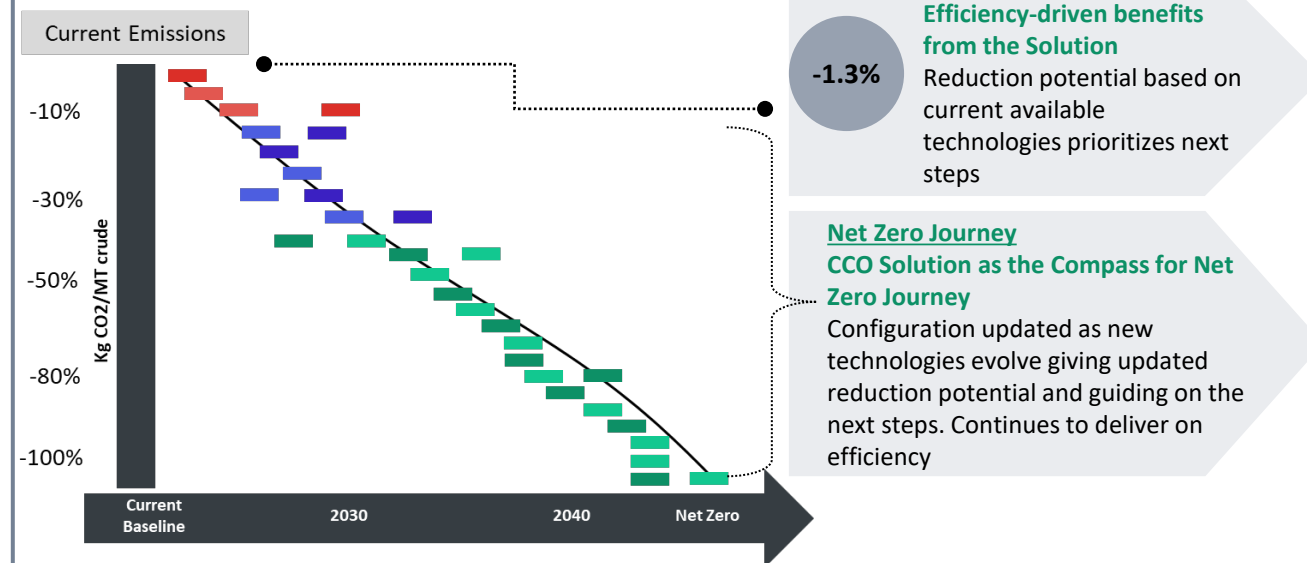
Carbon Aware Planning
Economic investments and operating plans considering scope 1,2 and 3 emissions



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

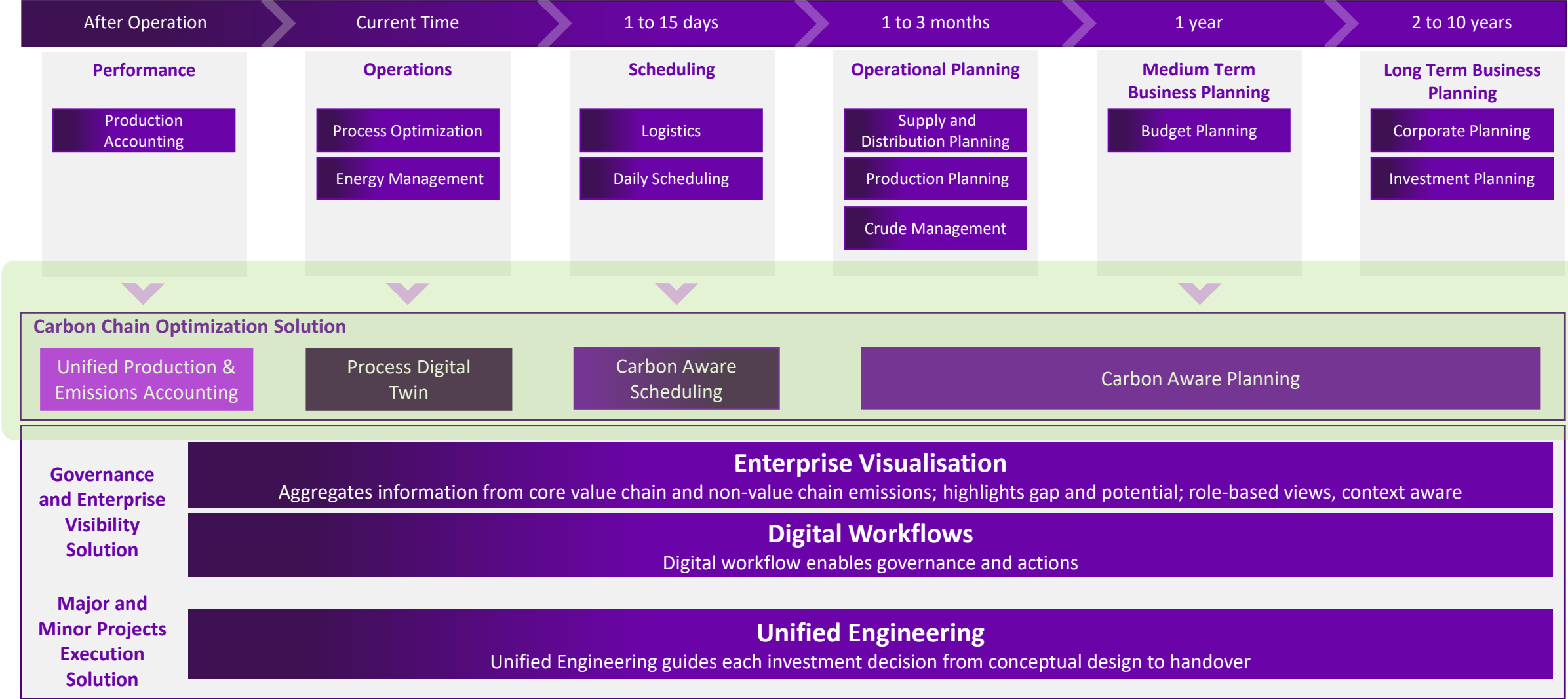
Carbon Navigate through multiple pathways to Net Zero



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





Sustainable supply chain optimization in the Cloud

Increased operational efficiency &
Enterprise Agility

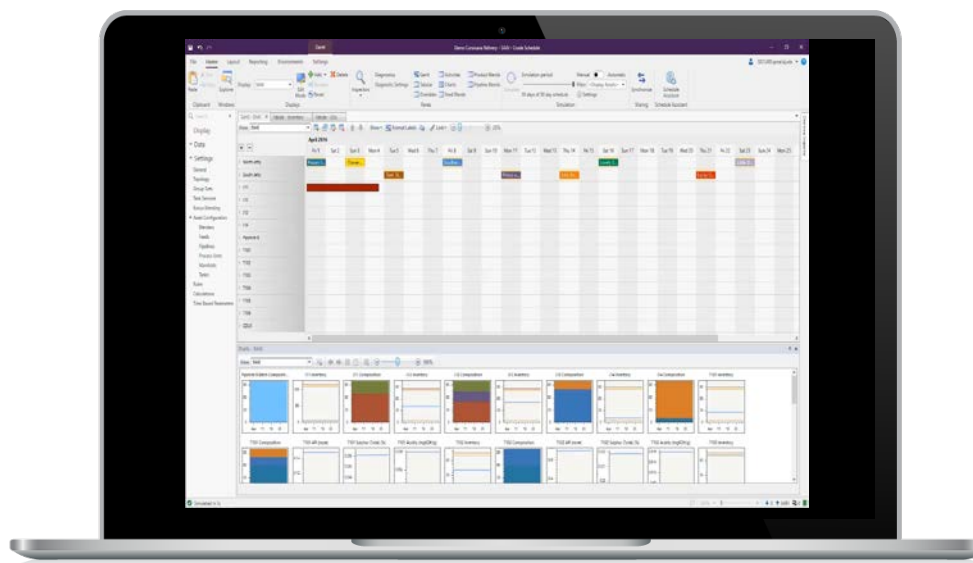
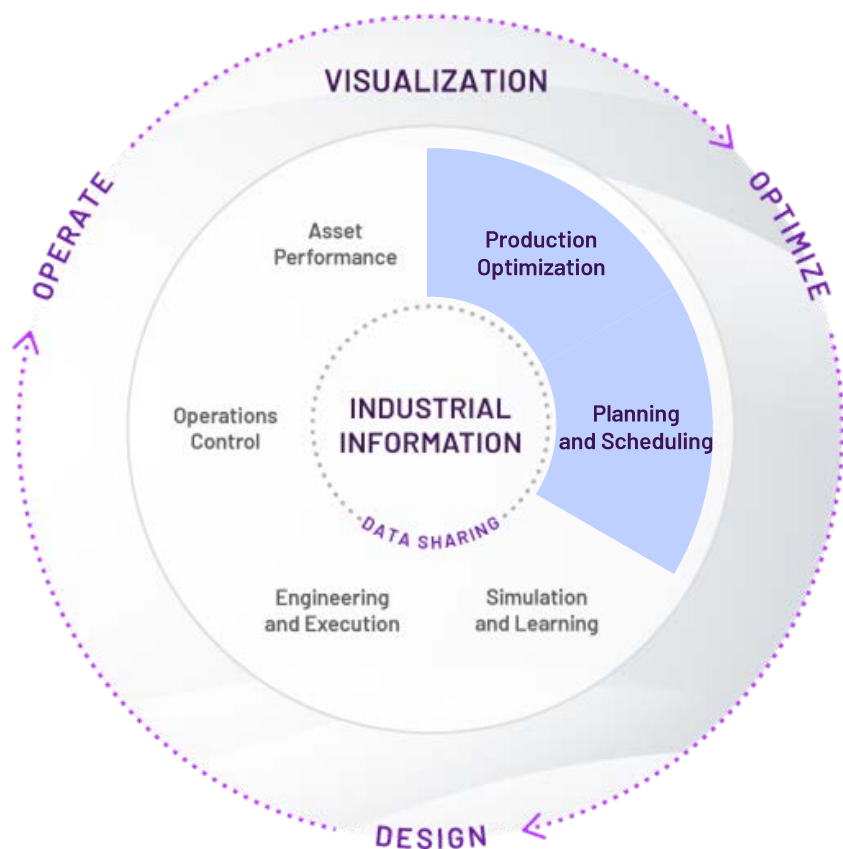
Quicker decision making based on
unified supply chain system

Production automatically optimized
using digital models infused with
smart analytics



Optimize your value chain to capture market opportunities

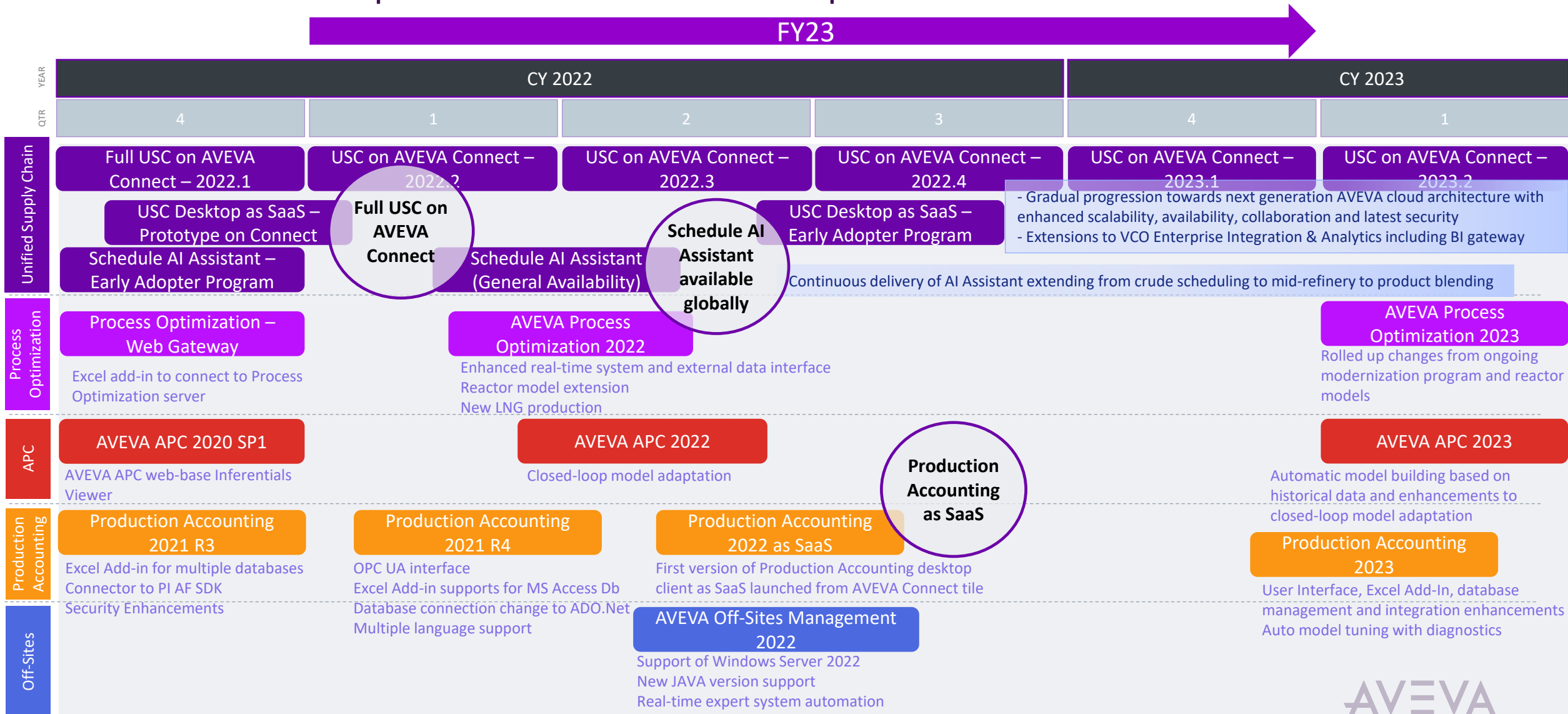
Unified system to enable enterprise agility and collaboration across supply chain & operations



Roadmap: Enable Sustainable Supply Chain, Enhanced Cloud Experience and AI Infusion (Scheduling), Industry Diversification (Gas and Chemicals), Sustainability & Energy Minimization (Optimization)



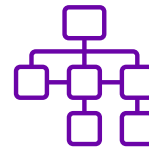
Value Chain Optimization Roadmap – FY 2023



*Effective economic optimization
of hydrocarbon value chain can
boost profitability by
\$50 to 300 million
per year for a typical
oil refinery*

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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AVEVA is a global leader in industrial software, driving digital transformation and sustainability. By connecting the power of information and artificial intelligence with human insight, AVEVA enables teams to use their data to unlock new value. We call this Performance Intelligence. AVEVA's comprehensive portfolio enables more than 20,000 industrial enterprises to engineer smarter, operate better and drive sustainable efficiency. AVEVA supports customers through a trusted ecosystem that includes 5,500 partners and 5,700 certified developers around the world. The company is headquartered in Cambridge, UK, with over 6,500 employees and 90 offices in over 40 countries.

Learn more at www.aveva.com