

OCTOBER 24, 2023

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# AVEVA value chain optimization

How AVEVA's agile solutions bring value in a volatile environment

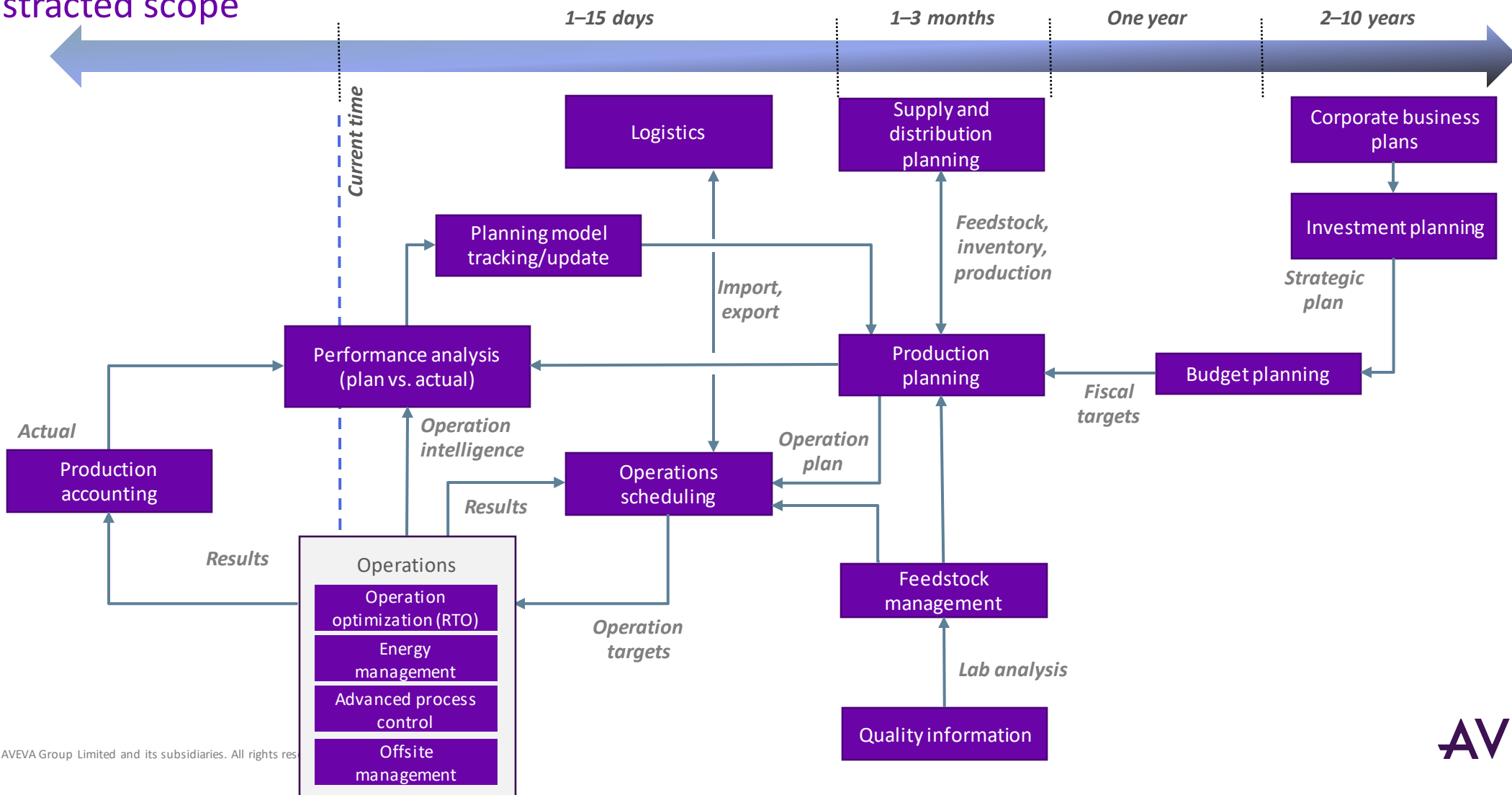
Freddy Garces - Director of Product Management, Value Chain Optimization

David Moody - Senior Product Manager, Unified Supply Chain

AVEVA

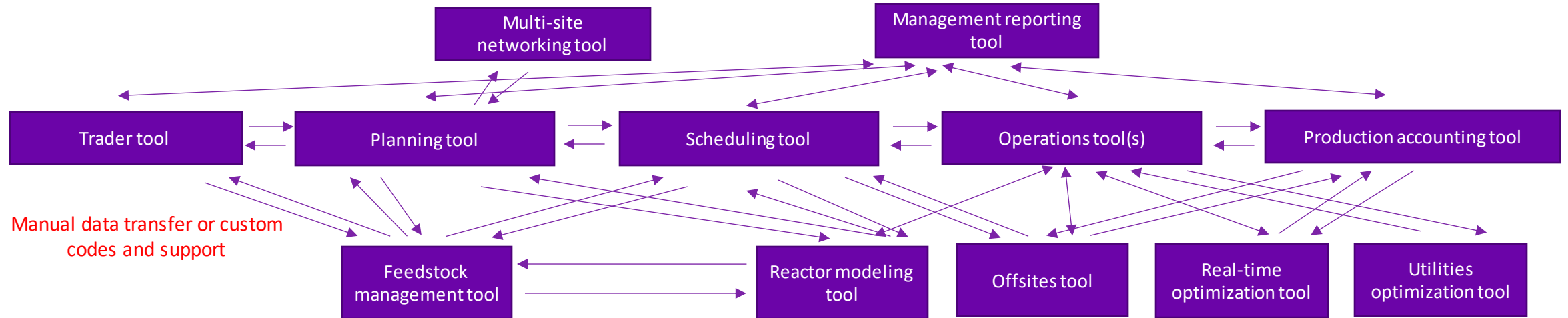
# AVEVA value chain optimization – refining and petrochemicals


Abstracted scope



# Downstream O&G value chain

## Real workflows: legacy of point solutions



  
Value leaks and lost opportunities

Low transparency

Low consistency

High tool dependency

Lack of agility

Low accuracy

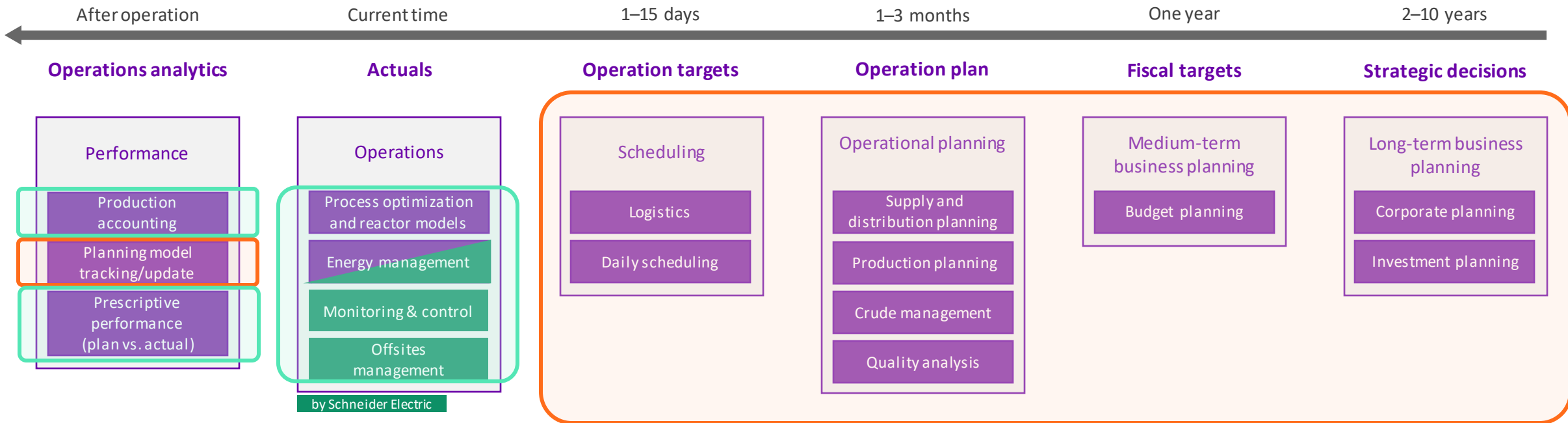
High maintenance

# Value chain optimization vision

Digital twin  
(process)

Digital twin  
(supply chain)

Enable enterprise collaboration and agility to maximize profitability across the value chain



Enterprise visualization (GCC)

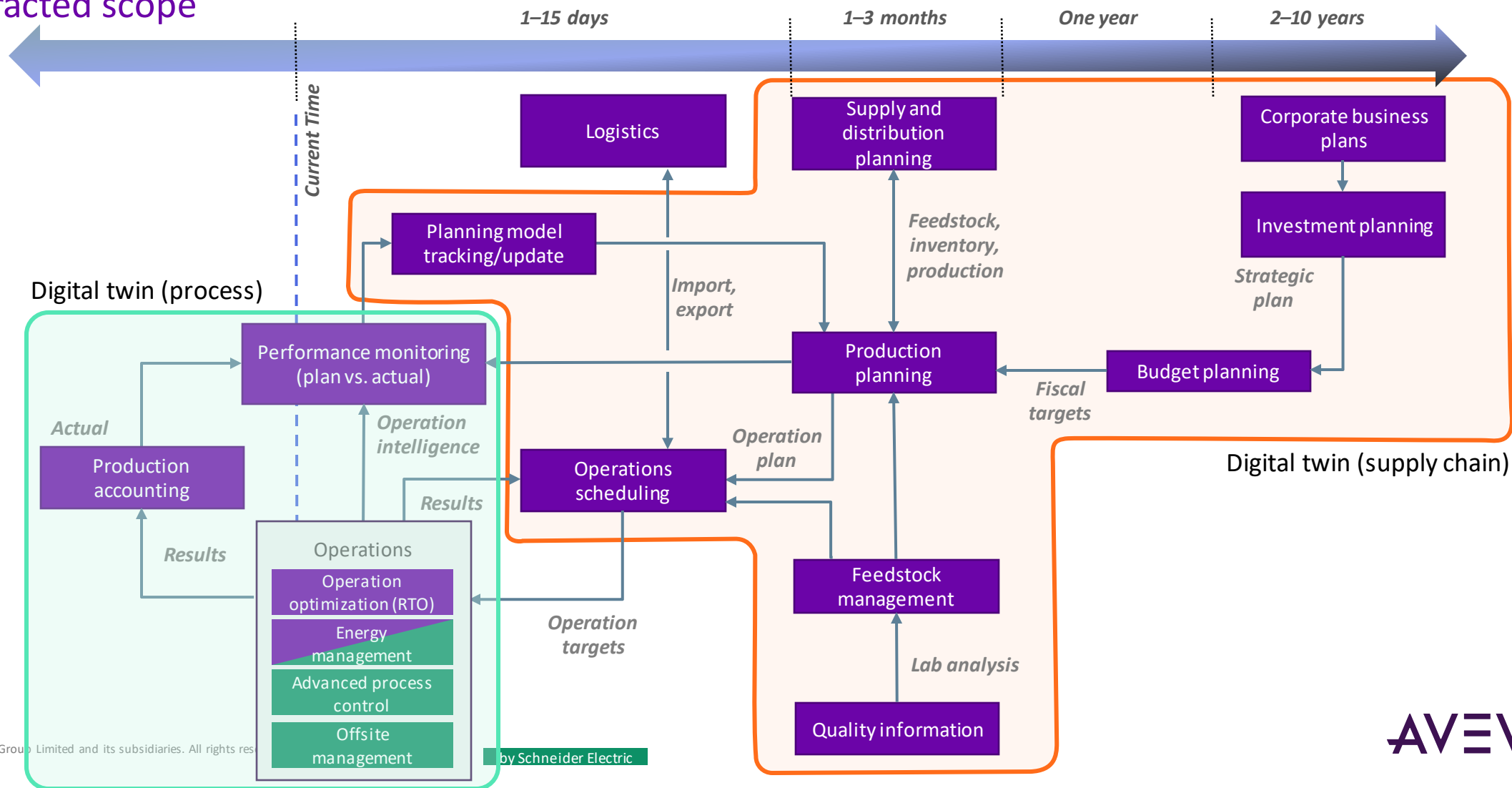
Enterprise crude knowledge management

Digital workflows across tool boundaries

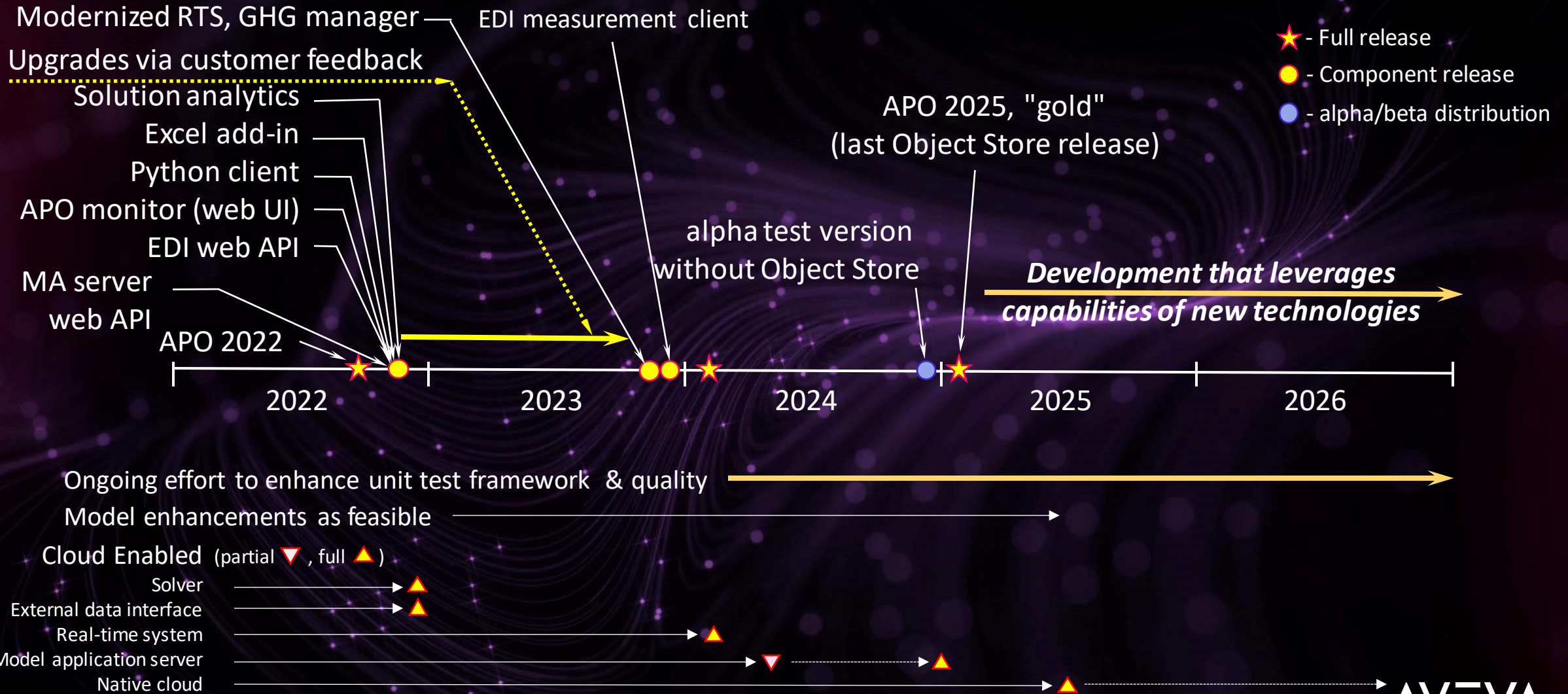
AI and machine learning for enhanced decision support

# Refining and petrochemical value chain

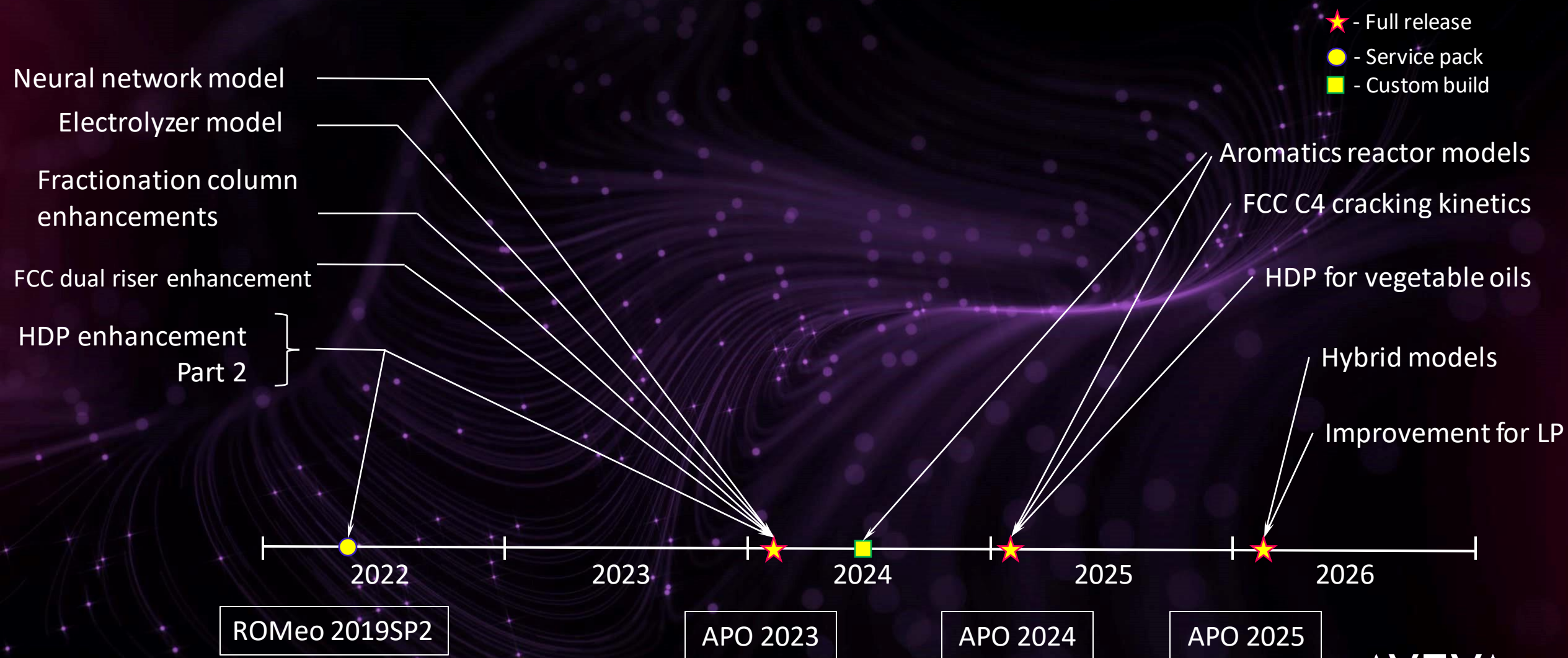
Abstracted scope



# AVEVA Process Optimization roadmap

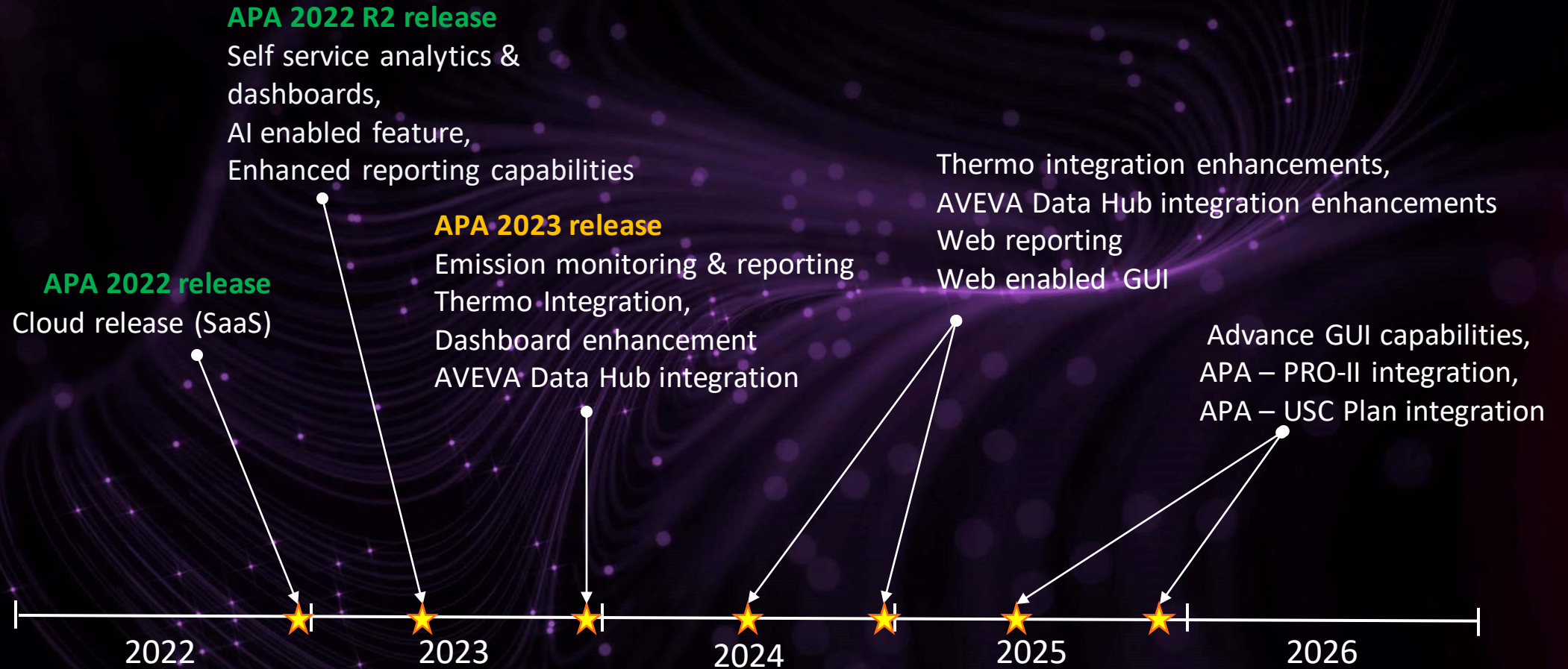


# Reactor models roadmap in AVEVA Process Optimization



# AVEVA Production Accounting roadmap

★ - Full release





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# AVEVA™ Unified Supply Chain

Agility in volatility

AVEVA

# Oil and gas downstream industry current scenario

## Market dynamics

Higher market volatility



Greater complexity



Workforce transition



Socio-political influence



High competition



## Business challenges

*Better visibility,  
rapid response*

*Improved return on capital*

*Process, operational  
efficiencies and cost out*

*Risk management*

*New business models*

*Value chain optimization*

## Technology trends



**Cloud and  
continuous delivery**



**Digital twin**



**Big data and  
analytics**



**AI and high-  
performance  
computing**



**Cyber security**

# Volatility is increasing – agility is critical

Pricing volatility  
demand volatility

Sustainability and  
energy transition

Feedstock availability  
feedstock quality

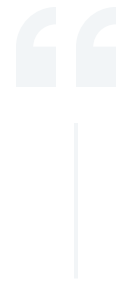
Regulatory



• 10-year WTI trend \$/bbl



# Digital agility forges digital resilience



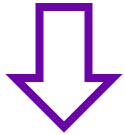
*"Oil and gas companies and their suppliers need to have capabilities in place to enable greater resiliency and adaptability as they face disruptive market environments."*



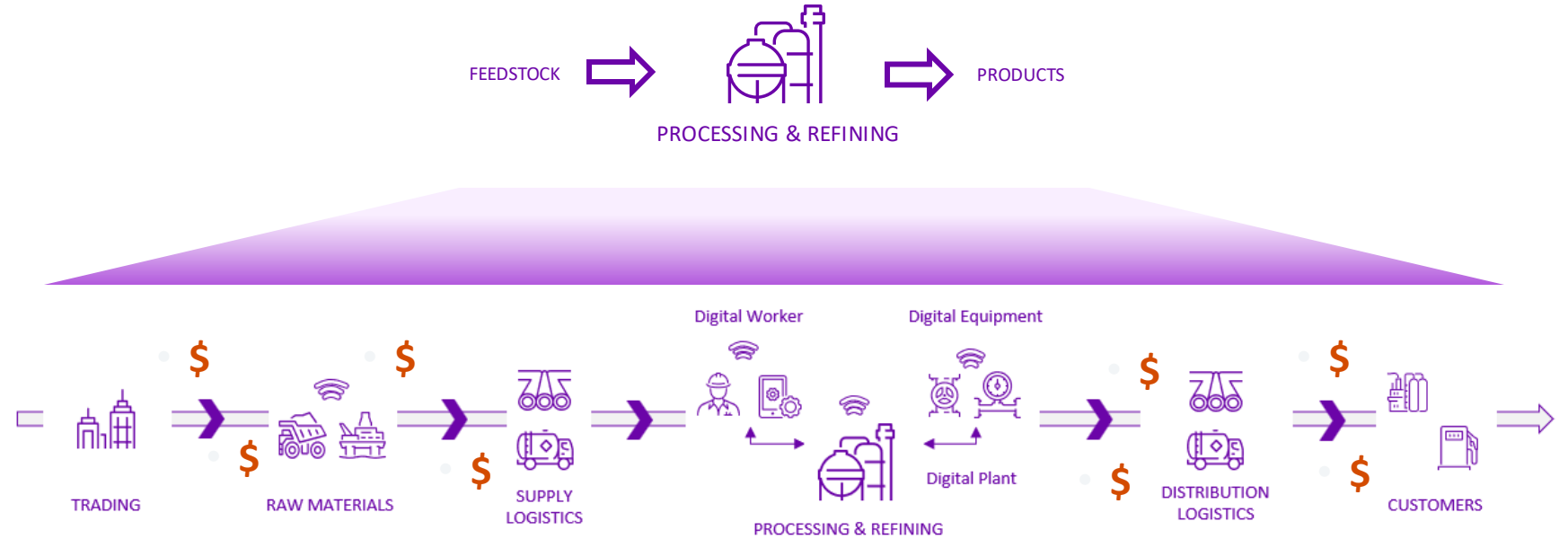
**-IDC Report**

# Complexity drives increasing value chain scope

Traditional planning  
manufacturing plant focus



Enterprise optimization  
end-to-end value chain



Requirements: A *unified* supply chain platform to enable end-to-end optimization

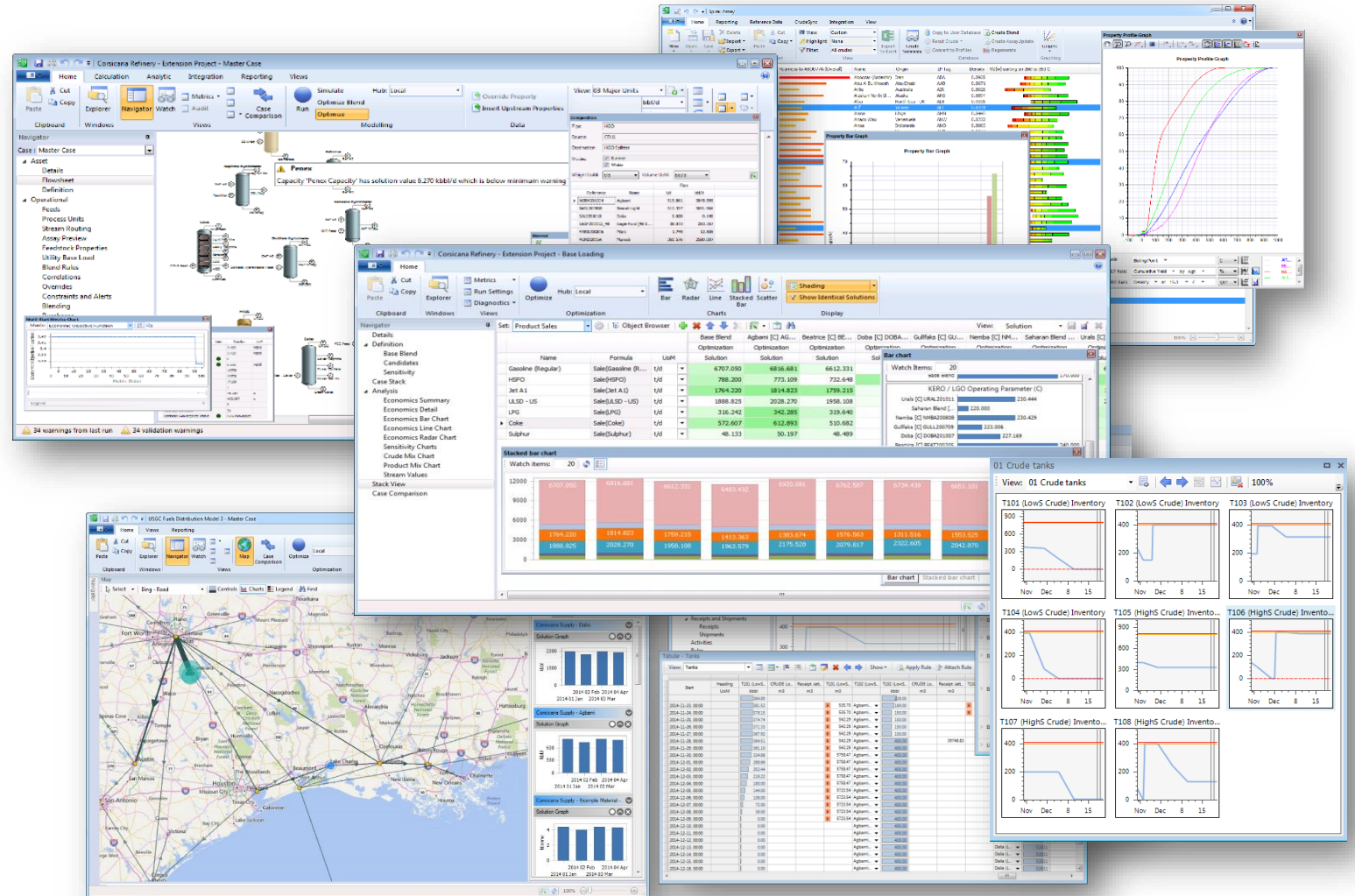
# Unified Supply Chain is designed for agile planning

No code platform  
Quick to learn and upskill

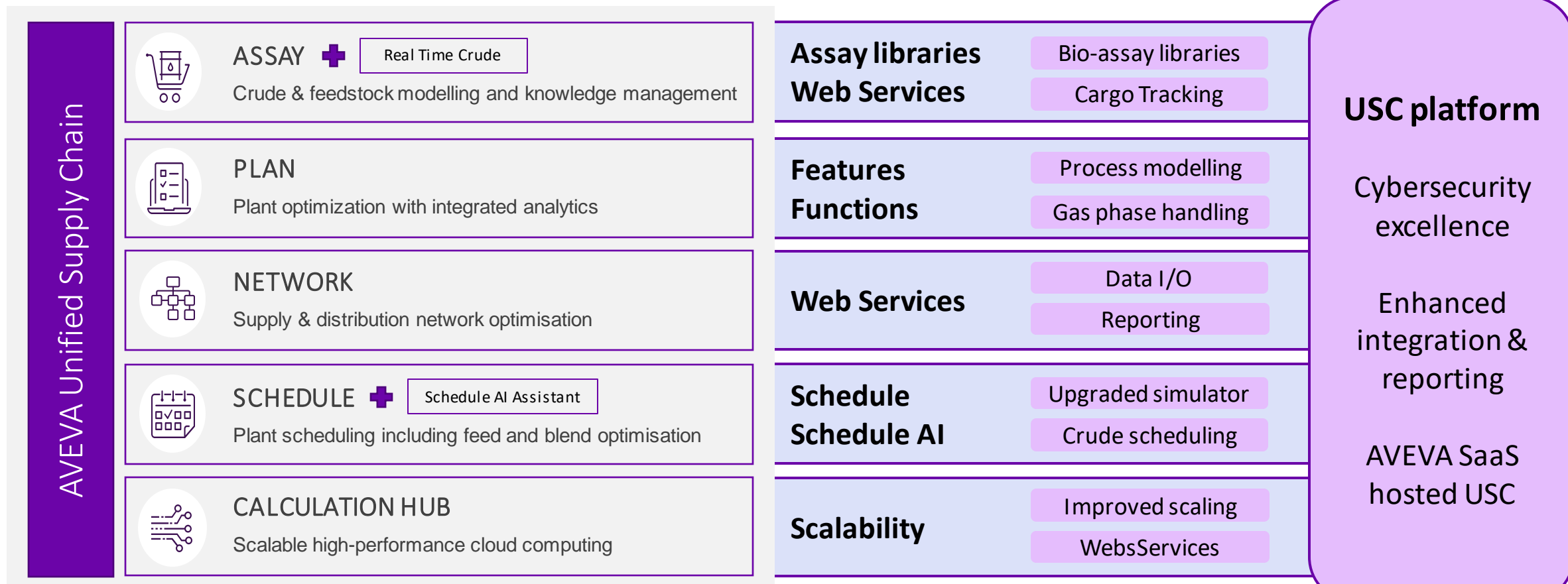
Easier model maintenance,  
updating and improving

Leverage cloud computing to  
increase analysis scale

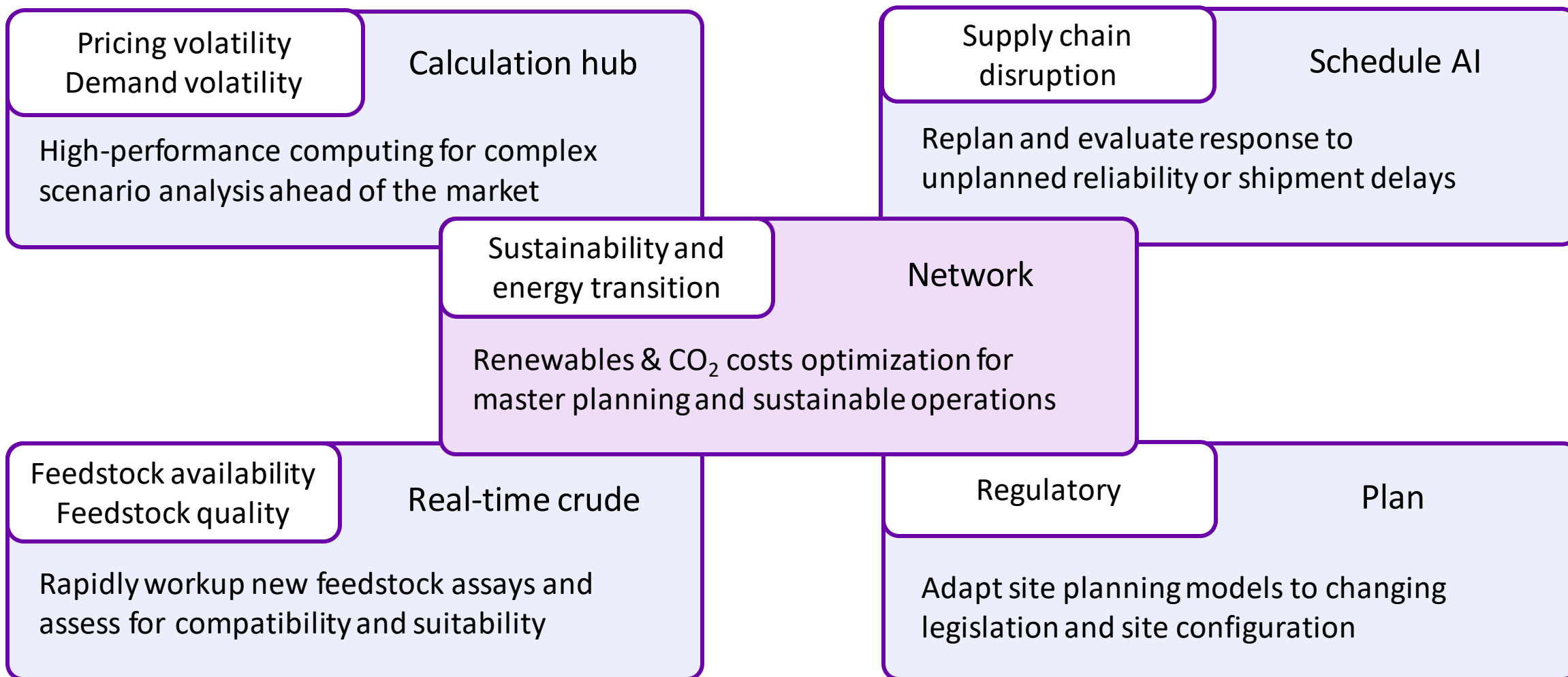
Unified - simplify dataflows  
and reduce silos



# Unified Supply Chain priorities & roadmap



# Where our users find value





# BP – oil and gas downstream

## Business revolution with AVEVA's solution in the cloud

- **Goals**
  - Simplify and standardize oil and 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 and crude purchase



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



Transparency and collaboration  
**Instant sharing**  
of plans across enterprise

# 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
- \$60-100M 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.”



**\$60–100M**

In optimization benefits for a single run of the model

# NESTE

## Sustainable supply chain optimization in the cloud

Increased operational efficiency and enterprise agility

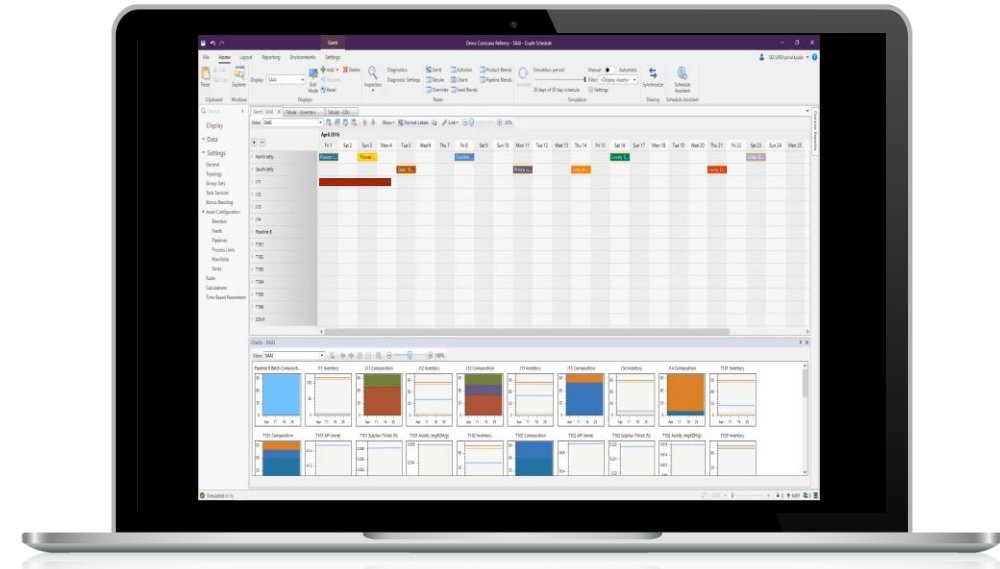
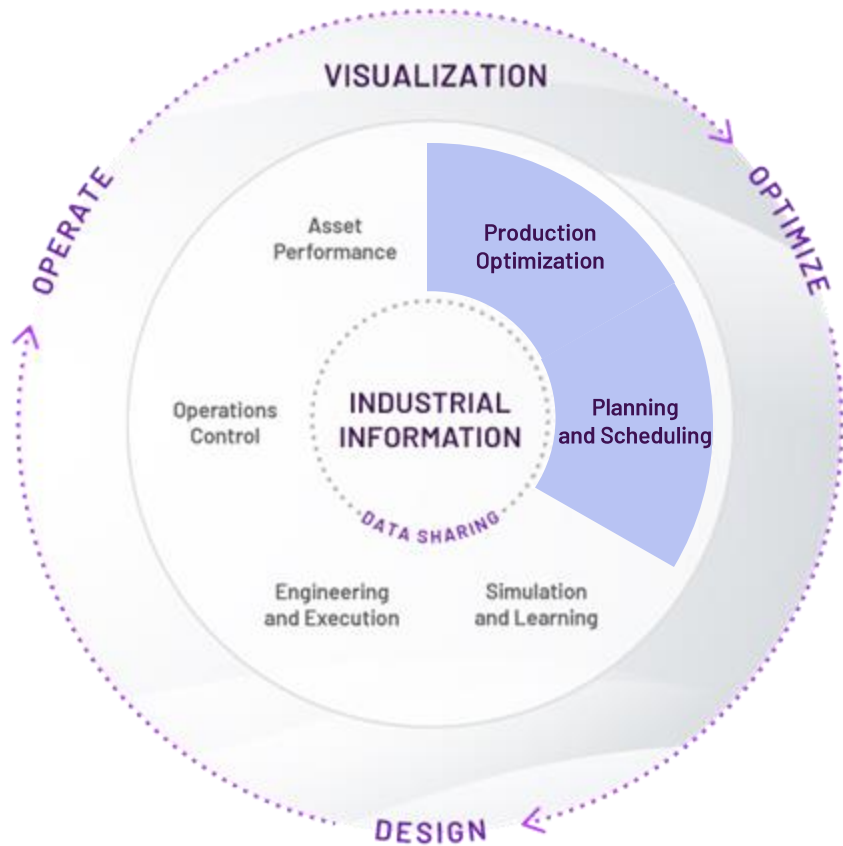
Quicker decision making based on unified supply chain system

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 and operations



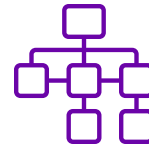
**Roadmap:** Enable sustainable supply chain, enhanced cloud experience and AI infusion (scheduling), industry diversification (gas and chemicals), sustainability and energy minimization (optimization)



*Effective economic optimization  
of hydrocarbon value chain can  
boost profitability by  
**\$50–300M**  
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**<sup>™</sup>



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# Questions?

Please wait for the microphone.  
State your name and company.



# Please remember to...

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# Thank you!

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AVEVA is a world leader in industrial software, providing engineering and operational solutions across multiple industries, including oil and gas, chemical, pharmaceutical, power and utilities, marine, renewables, and food and beverage. Our agnostic and open architecture helps organizations design, build, operate, maintain and optimize the complete lifecycle of complex industrial assets, from production plants and offshore platforms to manufactured consumer goods.

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. The company is headquartered in Cambridge, UK.

Learn more at [www.aveva.com](https://www.aveva.com)