Aspen Technology 2021 Investor Day

February 12, 2021

Agenda

Welcome	
Company Overview & Strategy	Antonio Pietri, President and Chief Executive Officer
BREAK	
Industrial AI Strategy & Solutions	David Arbeitel, Senior Vice President, Product Management
Creating Customer Value	John Hague, Executive Vice President, Operations
BREAK	
Financial Highlights	Karl Johnsen, Chief Financial Officer
Summary	Antonio Pietri, President and Chief Executive Officer
Q&A	

Safe Harbor Statement

This presentation may contain forward-looking statements for purposes of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Actual results may vary significantly from Aspen Technology's expectations based on a number of risks and uncertainties, including, without limitation, the risk factors described in Aspen Technology's most recent Annual Report on Form 10-K and any subsequent quarterly reports on Form 10-Q, each as filed with the U.S. Securities and Exchange Commission. Aspen Technology cannot guarantee any future results, levels of activity, performance, or achievements. Further, Aspen Technology expressly disclaims any current intention to update any forward-looking statements after the date hereof..

Aspen Technology Disclaimer

Aspen Technology may provide information regarding possible future product developments including new products, product features, product interfaces, integration, design, architecture, etc. that may be represented as “product roadmaps or product visions.”

Any such information is for discussion purposes only and does not constitute a commitment by Aspen Technology to do or deliver anything in these product roadmaps or otherwise.

Any such commitment must be explicitly set forth in a written contract between the customer and Aspen Technology, executed by an authorized officer of each company.

Company Overview and Strategy

Antonio Pietri, President and Chief Executive Officer

February 12, 2021

AspenTech Investment Highlights

- **Value Creation for Customers**
- **Mission-Critical Products and Solutions**
- **World-Class Customer Base**
- **Market Leadership Position**
- **Multi-Billion Dollar Opportunity**
- **Long-Term Contracts and Recurring Revenue Model**
- **Best-in-Class Profitability and FCF**
- **Uniquely Positioned to Deliver on Industrial AI**
- **Well Understood Growth Opportunities**

AspenTech at-a-Glance

WORLD LEADER IN ASSET OPTIMIZATION FOR CAPITAL-INTENSIVE INDUSTRIES

2400 **CUSTOMERS WORLDWIDE**

EPC – ENERGY – CHEMICALS – METALS & MINING – PHARMA – FOOD & BEV – POWER – PULP & PAPER

$59B **ANNUAL VALUE CREATED**

SAFETY – SUSTAINABILITY
PROFITABILITY – INNOVATION

40 **YEARS OF INNOVATION**

1710 **EMPLOYEES**

A RECORD OF FIRSTS

- Flowsheet Simulator
- Desktop Planning Tool for Refineries
- Model Predictive Controller
- Adaptive Control Technology
- Concurrent Conceptual Engineering Workflows
- Unified Environment for Planning, Scheduling and Operations
- Hybrid Models
- AIoT Hub

ESTABLISHED GLOBAL PARTNERSHIPS

ADVISORY PARTNERS
VALUE-ADDED RESELLERS
IMPLEMENTATION SERVICE PROVIDERS

Industrial AI

Insights | Guidance | Automation

Industry Dynamics

- Multi-trillion-dollar global industries
- High capital costs
- High volume production
- Complex manufacturing processes
- High leveraging of technology and engineering
- Diverse processes, continuous and discrete

- Safety-first mindset
- Sustainable operations
- Reliable operations
- Operational excellence

On a Digitalization Journey to the Smart Enterprise…

ENERGY

ENGINEERING, PROCUREMENT & CONSTRUCTION (EPC)

CHEMICALS

PHARMACEUTICALS

METALS & MINING

POWER

PULP & PAPER

FOOD & BEVERAGE

Our Mission

Accelerate the digital transformation of
the industries we serve by optimizing their assets
to run safer, greener, longer and faster

Proven Mission-Critical Solutions for Navigating Disruptions Due to COVID-19

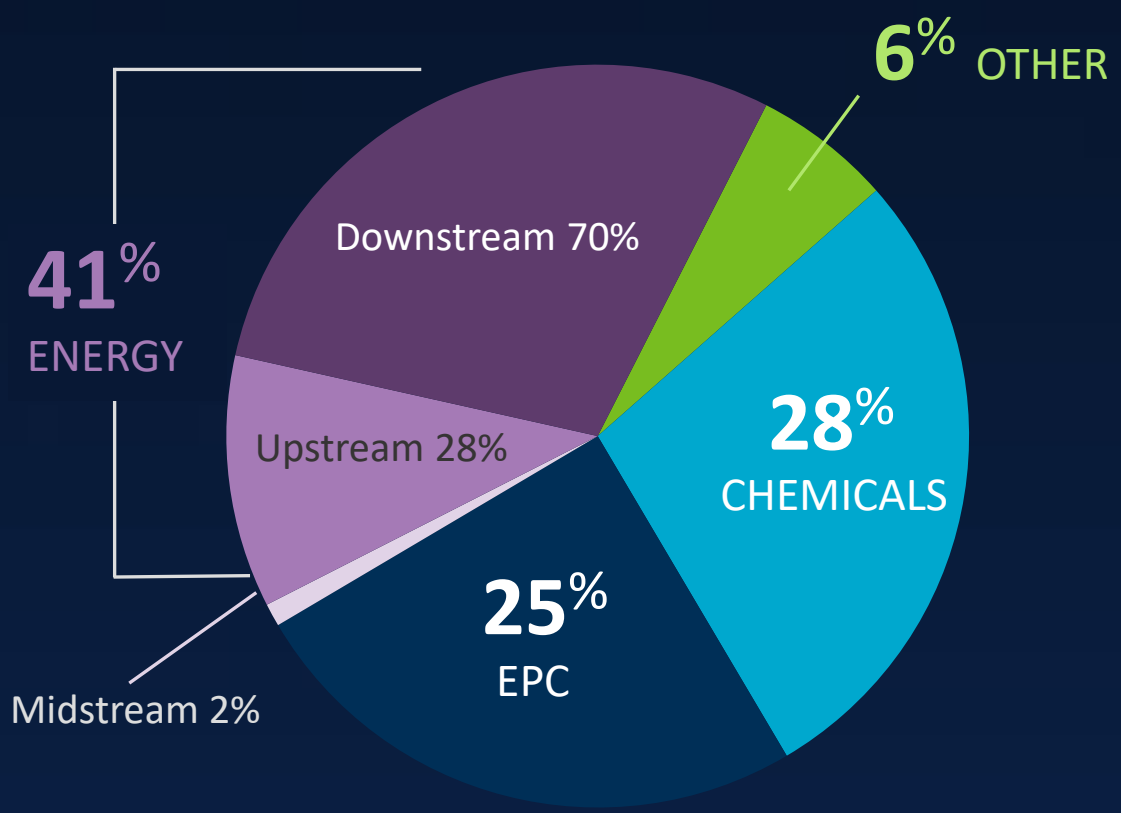
RAFFINERIE HEIDE

"Without Aspen DMC, there is no way we would have been able to adjust … so quickly during the coronavirus crisis."

OMV

"Aspen GDOT will improve agility in our response to market conditions, such as what we are experiencing right now… by minimizing product quality giveaway and maximizing production of the most valuable products."

Our Customers by Industry



Percentages based on Annual Spend for FY2020 through Q4

20/20
Largest E&C Oil & Gas Companies

19/20
Largest Petroleum Companies

20/20
Largest Chemical Companies

16/20
Largest Pharma Companies

E&C Ranking from *ENR* and *Refining and Petrochemicals* Petroleum Rankings from *Forbes*, Chemicals from *C&EN*, and Pharma from *PharmaExec*

Commitment to Our Employees

- Integrity
- Collaboration
- Innovation
- Customer First
- Diversity-Equality-Inclusion
- Execution
- Entrepreneurial Thought & Action
- Competitive Spirit

High-Performance Culture

World-class talent

Continuous investment in leadership and professional development

Management and technical career paths

Driven by Strong Values and Leadership Principles

High Engagement

Culture of Disciplined Agility

Every Employee Deserves a Great Manager and Leader

Leadership 2.0 Development

PGX Feedback Cycle for Accountability

we are AspenTech

Rosetta Stone

Recognized by Rosetta Stone with a G.E.M Award for our first-year program

Commitment to Our Communities

Accelerate the digital transformation of the industries we serve by optimizing their assets to run safer, greener, longer and faster

AspenTech Gives Back

40+ charities worldwide benefited from the corporate charitable giving program in 2020

COVID-19 Relief Fund donations

Holiday party budgets donated to local food banks

Supporting our Customers' Sustainability Targets is at the Core of our Mission

Aspen Mtell® Wins Singapore Business Review Award for Predictive Maintenance—for preventing costly downtime and reducing the risk of unplanned emissions

AspenTech and FPCO win Green Supply Chain Award from SDC Executive publication

Focus on Environmental Causes

Donating capital, technology and expertise as a member of the Alliance to End Plastic Waste

AspenTech Joins Alliance to End Plastic Waste

"We welcome Aspen Technology as a member of the Alliance and its commitment to support and advance our mission. The collaboration among more than 50 member companies, strategic allies and supporters at the Alliance will bring us closer to our vision of ending plastic waste in the environment. Ultimately, we are unlocking scalable and sustainable solutions towards a circular economy."

— Jacob Duer, President and CEO of the Alliance to End Plastic Waste

Market Dynamics

The World Has Changed!

An Even More VUCA Environment

Volatility

Uncertainty **Complexity**

Ambiguity

Industries and Associated Dynamics

ENERGY

Industry Trend:

- OPEC **production adjustments** in early 2020, coupled with significantly **decreased energy demand** due to COVID-19, created **a reduced CAPEX environment and impacted refining margins**

Industry Response:

- Operational agility and flexibility
- Efficiencies and productivity increases
- **Energy transition**, decarbonization
- **Crude-to-chemicals**

CHEMICALS

Industry Trend:

- **Industry imbalance**—some sectors seeing decreased demand, while others such as plastics and cleaning products experiencing growth / shifts; **disciplined capital allocation** will be key in period of recovery

Industry Response:

- Operational agility and flexibility
- Efficiencies and productivity increases
- Supply chain management insights
- **Circular economy**, new products

EPC

Industry Trend:

- **Short-term capital spending cuts** and **project delays** due to price volatility and uncertainty around recovery timing; **lower-cost E&Cs demonstrating advantage** in upcoming recovery period

Industry Response:

- Mergers and acquisitions
- **Operations & Maintenance Strategy**
- Leverage technology to increase productivity in design, **Aspen Multi-Case™**

Dated Brent-WTI price spread to widen relative to tight fourth quarter 2020

Dated Brent and WTI-Cushing crude oil price outlook to 2022

Energy Industry Outlook | January 2021

Benchmark crude price outlook ($/bbl)

	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
Dated Brent	$63.1	$68.7	$61.8	$63.1	$50.0	$29.6	$42.8	$43.9	$55.3	$55.4	$56.3	$60.5	$59.6	$59.9	$59.8	$61.0
WTI	$54.8	$59.9	$56.4	$56.9	$45.6	$28.0	$40.9	$42.6	$52.6	$52.6	$53.5	$57.5	$56.3	$56.6	$56.5	$57.6

Source: IHS Markit, Argus Media Limited (historical)

Note: For our monthly Dated Brent and WTI price outlook, please see the accompanying IHS Markit Global Crude Oil Markets Short-Term Outlook: Fundamentals file.

Pandemic Causes Downturn in Capacity in Richer Countries

Increasing opportunity for China, India and Middle East to add capacity

2.2+ MILLION BARRELS A DAY
worth of fuel-making capability **ADDED**

China, India & Middle East

(International Energy Agency)

2009 – 11

2020 – 21

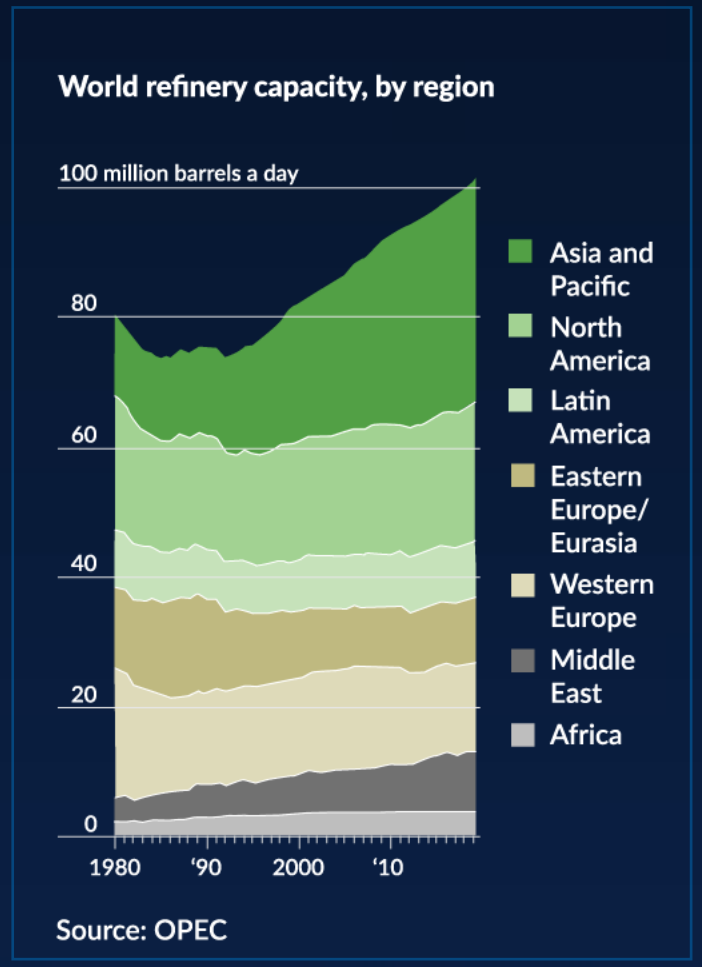
2.2 MILLION BARRELS A DAY
refining capacity **CLOSED**

(according to IHS Markit)

1.7+ MILLION BARRELS A DAY
worth of refining capacity has or is poised to **DISAPPEAR**

countries such as US & Japan

(International Energy Agency)



By David Winning and Rebecca Elliott

Reported by The Wall Street Journal, December 7, 2020

Indian Government Estimates Growth in India Energy Sector

33-35%

Reduction in emissions intensity of its GDP by 2030*

Oil refining capacity in the next 5 years

Double

4x

Increase the share of Natural Gas in energy needs this decade

Narendra Modi says India set to double oil refining capacity in five years, earlier than expected. Reported by Reuters November 21, 2020

*IEA India 2020 Energy Report

Saudi Aramco Set to Expand Global Footprint in Chemical Industry

Challenging Situation	Regional Opportunities	Macro Shift
… seeing a number of companies **announcing global refinery rationalizations or shutdowns** – in Europe, the US and at some scale in Asia …	… **more than 50% of the world's new refining capacity** that will come on stream in the next 8-10 years **will be in Asia**, and **70-80% of that will be focused mainly on plastics** …	… expectation that **petrochemicals will represent over half of the growth in global oil demand** over the next decade.

Amin Nasser – Saudi Aramco President and CEO

Reported by Trade Arabia
December 4, 2020

Industries and Associated Dynamics

PHARMACEUTICALS

Industry Trend:

- **Supply chains greatly impacted** and will be difficult to manage; **Risk management** key as asset reorganization may be necessary, impacting time to market

Industry Response:

- **Accelerated Digitalization Strategy** to advance data-led approaches
- **Pharma 4.0**
- Transformation of production

METALS & MINING

Industry Trend:

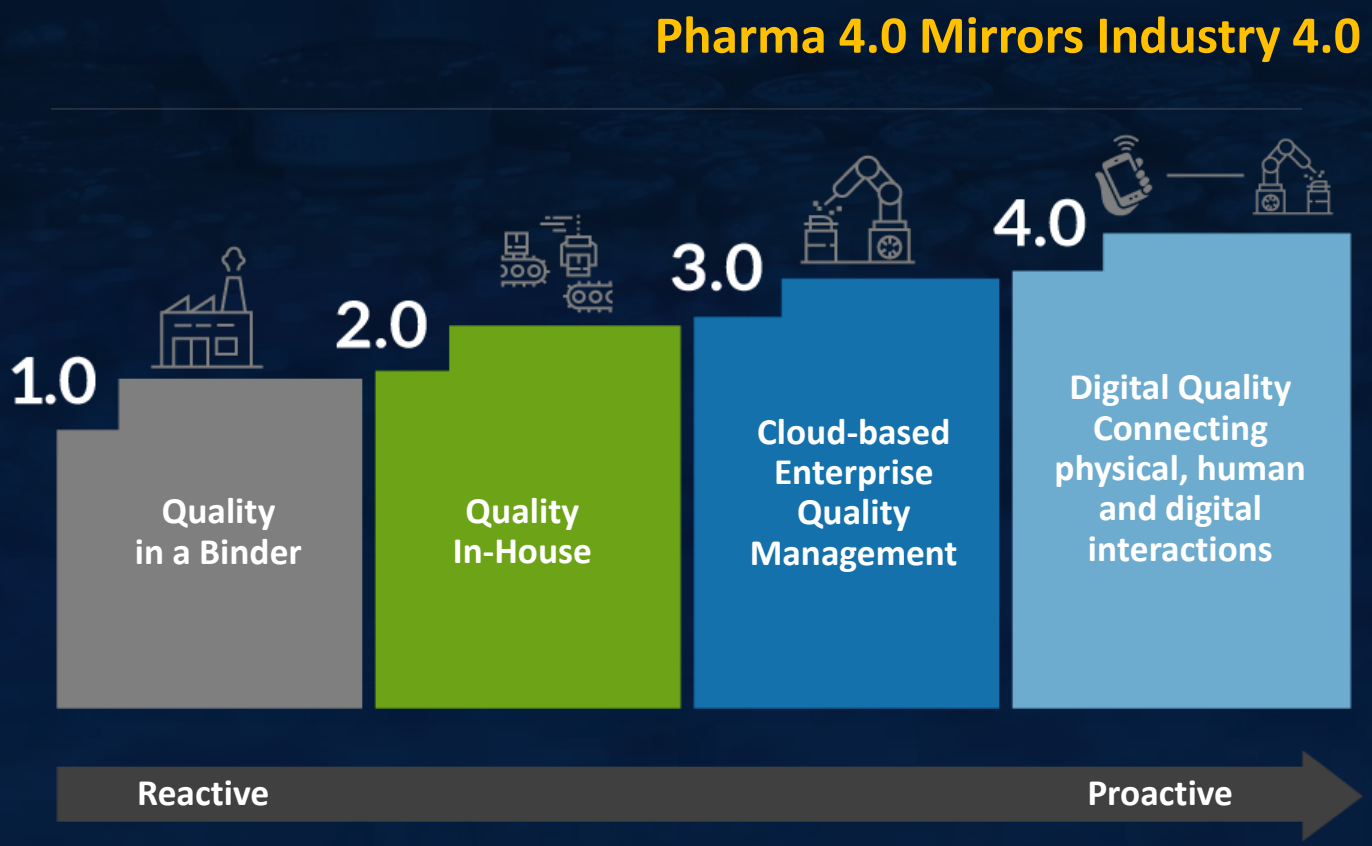
- Price volatility and economic uncertainty to **limit capital spending**; need to **maximize production efficiency** without making capital commitments

Industry Response:

- **Applying technologies** that reduce water, energy and capital
- Use predictive intelligence for safe & self-learning operations

Pharmaceutical Market Dynamics

- Increasing Demand on Accessibility and Affordability of Therapeutics
- Increasing Complexity & Targeted Nature of Newer Therapeutics
- Transformation of Production
  - Collaboration across Lifecycle and Integration across Value Chain
- Pharma 4.0
  - Proposed by ISPE to address these needs
- COVID-19 has accelerated push to digitize, transform infrastructure



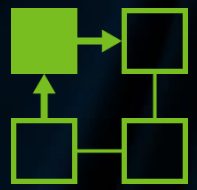
Strategy

Asset Optimization Powers the Smart Enterprise

OPERATE
Running to the limits of performance

MAINTAIN
Driving uptime through actionable insights

DESIGN
Pushing the boundaries of what's possible



Asset Lifecycle

A comprehensive, holistic approach achieves the highest possible financial return over the entire asset lifecycle – safer, greener, longer and faster

Asset Optimization — Extending the Lifecycle

Engineering

PUSHING ASSET DESIGN

- R&D/Conceptual Engineering
- Basic Engineering
- Equipment Engineering
- Debottlenecking & Upgrades Planning

Manufacturing & Supply Chain

OPTIMIZING ASSET OPERATIONS

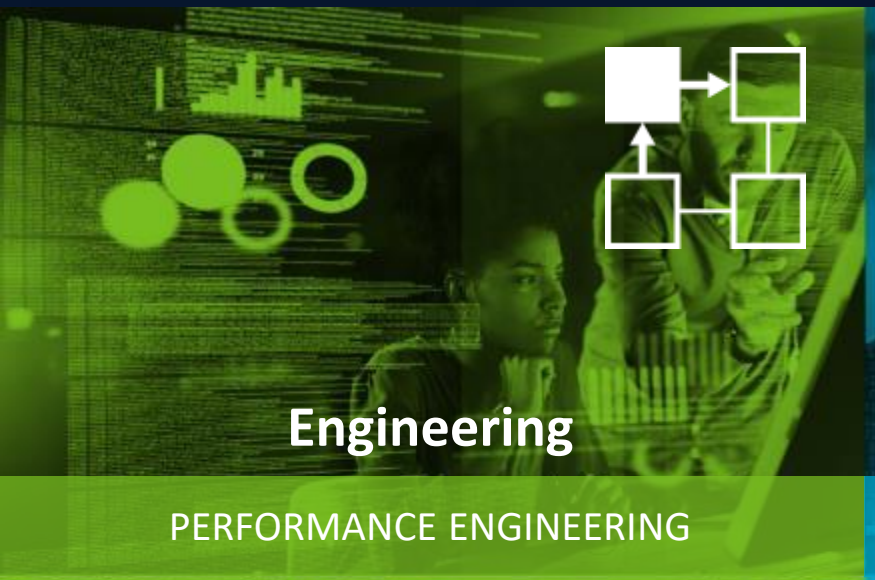
- Long-term Forecasting & Planning
- Production Planning & Scheduling
- Manufacturing Operations Management
- Dynamic Optimization & Advanced Control

Asset Performance Management

DRIVING ASSET UPTIME

- Predictive & Prescriptive Analytics
- Reliability Management
- Maintenance Strategy

Asset Optimization — Extending the Lifecycle



Engineering

PERFORMANCE ENGINEERING

Pushing the Boundaries of What's Possible

Manufacturing & Supply Chain

OPTIMUM OPERATIONS

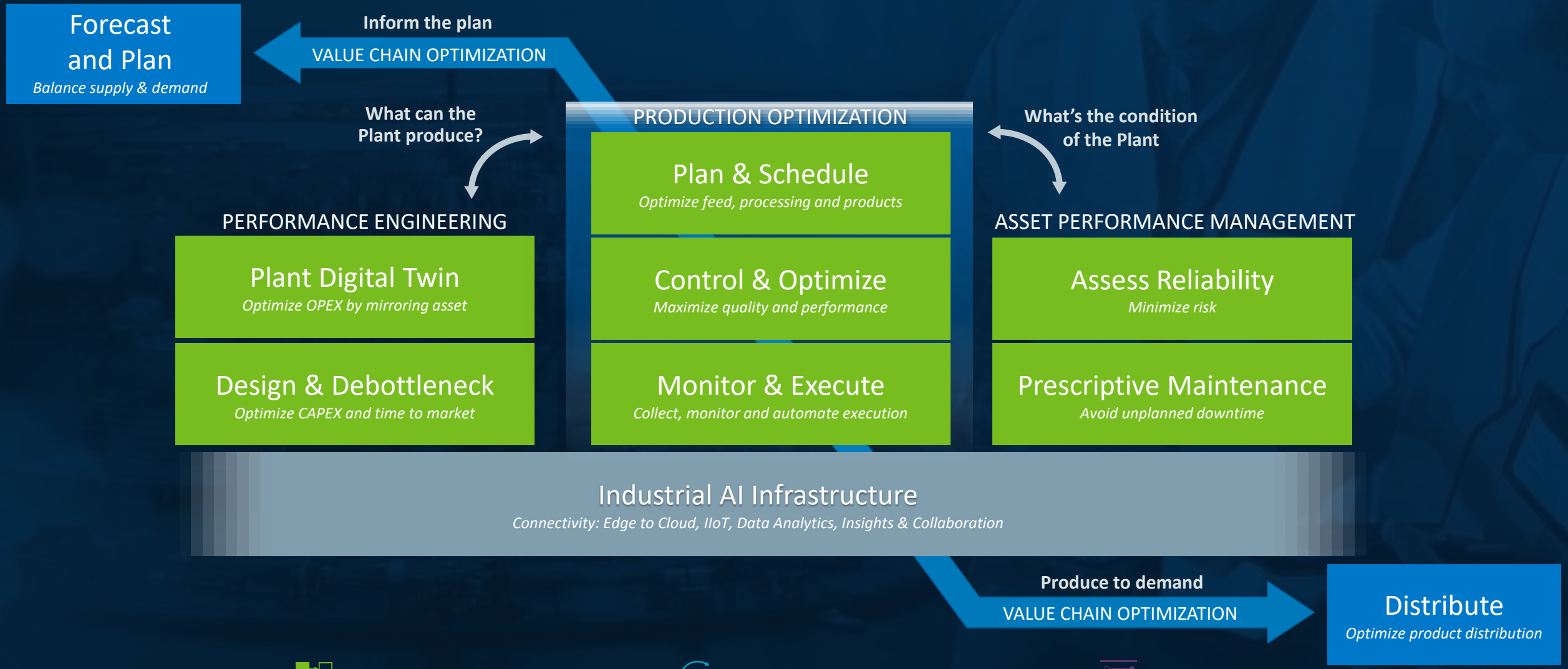
Running to the Limits of Performance

Asset Performance Management

MAXIMUM RELIABILITY

Driving Uptime Through Actionable Insights

AspenTech Provides a Complete End-to-End Solution



Asset Optimization—Extending the Lifecycle

$59 B

2400 Customers

$1.4 T

All Manufacturing Industries

Digitalization Investments Provide Significant Returns

Technology

Cost of technology has dropped, making adoption of digital technologies more cost effective

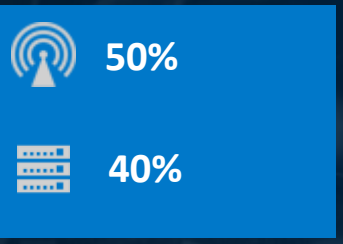
Data Immersion

New sensors allow for more advanced and faster transmitting

Generational Shift

By 2025 "digital natives" will account for 75% of the global workforce

Digital managers will influence how their team and business work



$14.2T Benefit IoT to the Global Economy

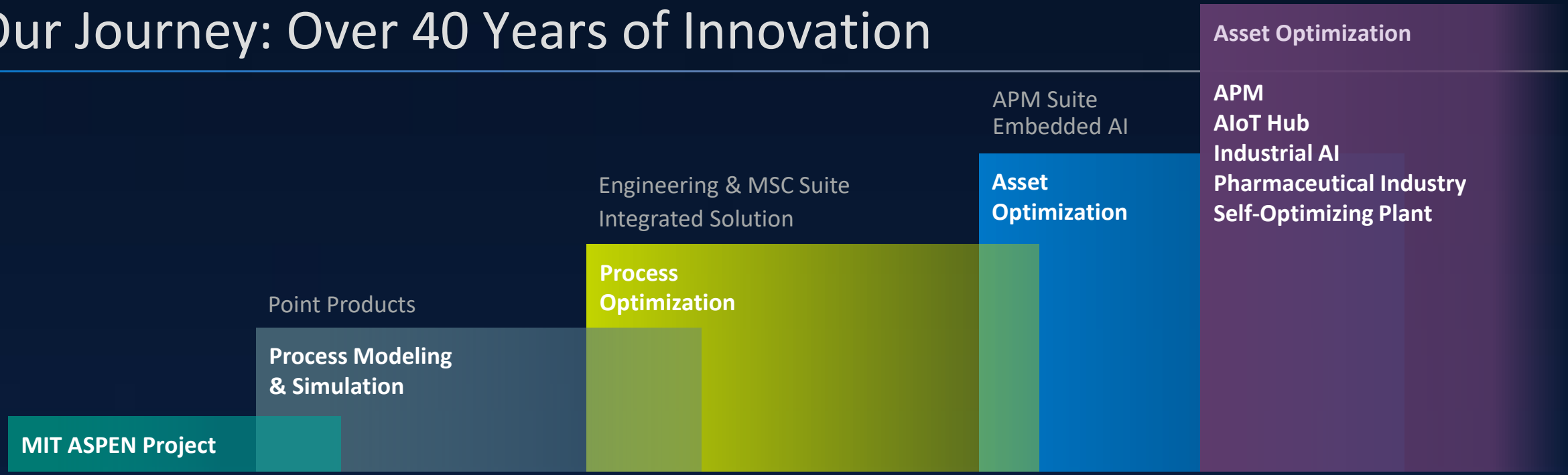
Typical ROI Improvement

Production Throughput	**5 – 25%**
Asset Utilization	**3 – 5%**
Asset Downtime	**1 – 5%**
Maintenance Productivity	**10 – 15%**
Total Maintenance Cost	**15 – 30%**
Energy/Run Costs	**5 – 15%**
Material Costs	**5 – 25%**
Equipment Availability	**5 – 10%**
Inventory	**15 – 20%**
Repair / Fix Cycles	**20 – 30%**
Asset Lifecycle / Age	**15 – 20%**

Source Major Middle Eastern Refiner, presented at ARC 2019

Accelerating Growth

Our Journey: Over 40 Years of Innovation



Aspen Plus®
Chemical Process Modeling

Aspen PIMS®
Plan Refining Feedstocks

Aspen DMCplus®
Predictive Control

Aspen Plant Scheduler®
Create Optimal Schedules

Hyprotech Acquisition
Aspen HYSYS® for Energy Process Modeling

aspenONE®
Integrated Suites for Engineering, Manufacturing & Supply Chain

aspenONE® V7
Easily Adopt Best Practices for ENG Excellence

Feature Acquisitions
Relief Valve Sizing, Solids Modeling, Pipeline & Dock Scheduling, Sulfur Modeling Depressurization Systems

aspenONE® V8
Usability & Integrated Workflows

aspenONE® V9, V10, V11
Push the Limits of Asset Performance

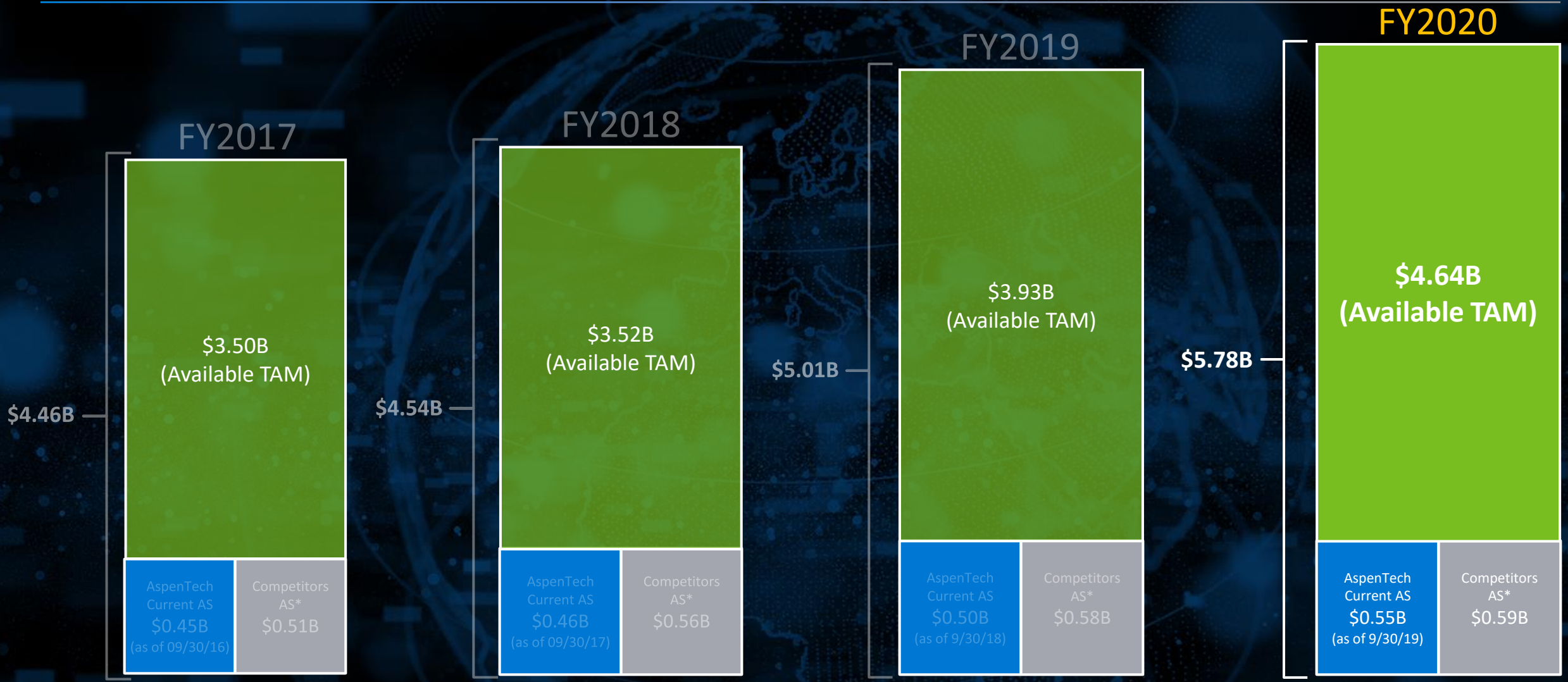
Asset Performance Acquisitions
Ensure Asset Reliability, Predictive & Prescriptive Maintenance, Insights from Multi-Variate Analysis

GDOT & Operator Training
Maximize Operational Excellence through Coordinated Control & Train Operations

Digitalization & Embedded AI
Digitalization through Actionable Insights & Automated Execution

Industrial AI
Operational Excellence with Self-Optimizing Plant

Potential TAM[1] (AS) — Grew by 15% from FY2019 to FY2020



1. Estimated by AspenTech from internal white space methodology on existing customer base

Secular Trends Supporting AspenTech's Growth

Digitalization

- Improved Safety
- Increased Reliability
- Efficiency and Productivity

Sustainability

- Energy Transition
- Circular Economy
- Resource Efficiency

End Market Dynamics

- Refining capacity shift to growing regions
- Oil-to-Chemicals (O2C)
- EPC's Operations and Maintenance strategy

The Dual Challenge

Meeting the growing demand for energy and chemicals from a growing population with increasing standards of living, while also addressing the risks of climate change and plastic waste in the environment.

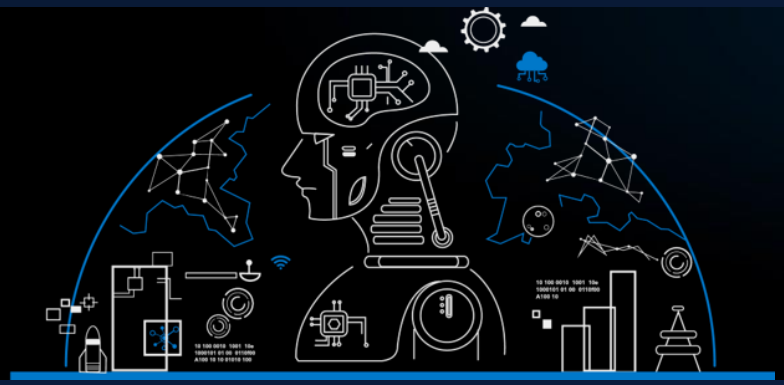
Planning and Executing for Growth

- **Penetrate** existing customer base
- **Grow** APM and AIoT into existing and new customer base
- **Drive** increased usage and adoption into the existing customer base
- **Increase** Total Addressable Market through organic and inorganic innovation
- **Leverage** existing capabilities for energy transition and circular economy
- **Expand** to adjacent industries and market segments

Industrial AI
AIoT Hub

New Technology Reality: Enabler, Disruptor or Both?

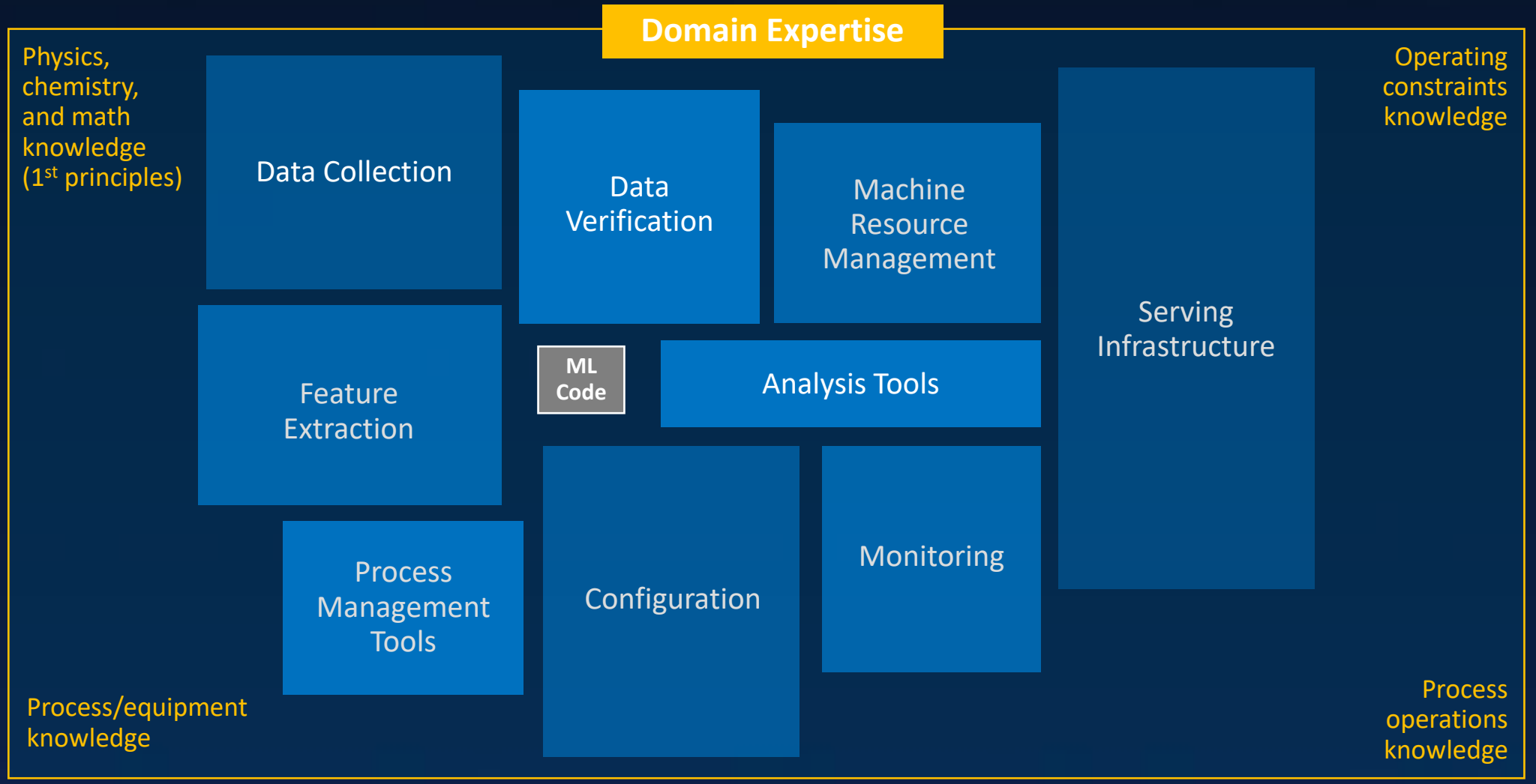
200x More Data



Industry 4.0 Technologies

Connected Devices

Real-World Production ML System



Typical ML System Software, Tools and Infrastructure

Source: Google Machine Learning Resources: https://developers.google.com/machine-learning/crash-course/production-ml-systems

AspenTech is the Industrial AI Company – A Unique Position

Data Insights

Data Management

AI/ML, Advanced Analytics

Domain Expertise

Engineering Fundamentals

Industry Experience

Industrial AI

Insights | Guidance | Automation

Hybrid Models — Industrial AI in Action

DEMOCRATIZE APPLICATION OF AI

Hybrid Model

Expertise + ***Data Insights***

Engineering
Industry Experience

Data Management
AI/ML, Analytics

Opportunities

- Interpolate and extrapolate more accurately
- Easier to analyze and interpret
- Require less training data
- Inferential for unmeasured variables
- Models run more quickly

$$\varepsilon_g \frac{\partial C_i}{\partial t} + u_g \frac{\partial C_i}{\partial z} = \varepsilon_g \frac{\partial}{\partial z}\left(D_{ax} \frac{\partial C_i}{\partial z}\right) + \varepsilon_g \frac{r_j}{b_j}$$

$$\frac{\partial C_k}{\partial t} = r_j$$

$$\left(\varepsilon_g \rho_g cp_g + \varepsilon_s \rho_s cp_s\right) \frac{\partial T}{\partial t} + \left(\varepsilon_g \rho_g cp_g u_g\right) \frac{\partial T}{\partial z} = \varepsilon_g \frac{\partial}{\partial z}\left(\lambda_{ax} \frac{\partial T}{\partial z}\right) + \varepsilon_g r_J (-\Delta H_J)$$

$$-\frac{\partial P}{\partial Z} = 150 \frac{\mu_g \cdot u_g}{d_p^2} \frac{(1-\varepsilon_g)^2}{\varepsilon_g^3} + 1.75 \frac{\rho_g \cdot u_g^2}{d_p} \frac{(1-\varepsilon_g)}{\varepsilon_g^3}$$

$$\frac{\partial C_i(0,t)}{\partial z} = \frac{u_g}{\varepsilon_g D_{ax}} (C_i(0,t) - C_{i,in}), \quad \frac{\partial C_i(L,t)}{\partial z} = 0$$

$$\frac{\partial T(0,t)}{\partial z} = \frac{u_g cp_g \rho_g}{\varepsilon_g \lambda_{ax}} (T(0,t) - T_{in}), \quad \frac{\partial T(L,t)}{\partial z} = 0$$

Pure First-Principles Model

Challenges

- May not capture all phenomena
- Expertise required
- Can be time consuming to create and run

Pure Machine-Learning Model

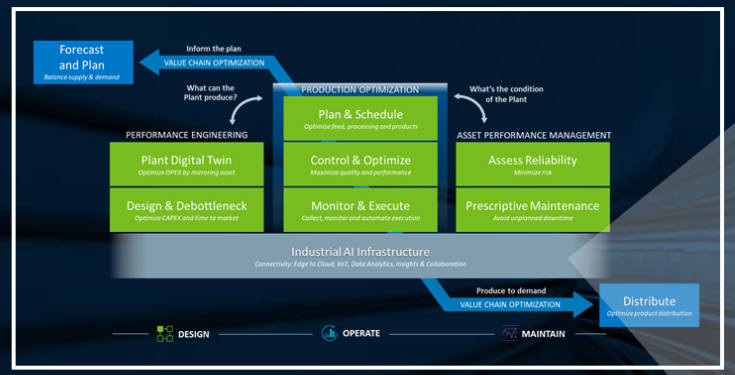
Challenges

- Need lots of “good” data
- May not extrapolate well or may violate physical constraints
- Difficult to interpret

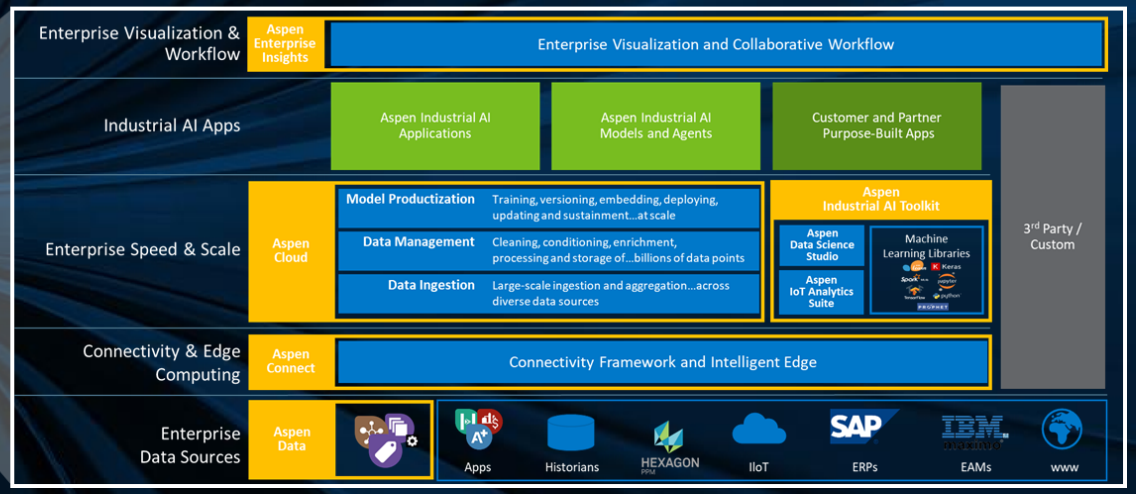
Lower Total Cost of Ownership and Improve Time to Value

The AIoT Hub

Digital Reference Architecture



Industrial AI Infrastructure: AIoT Hub



- Cloud-ready Infrastructure to deliver Industrial AI
- Data mobility for data historian and other enterprise data sources
- Scale deployment of Industrial AI applications
- Infrastructure to deliver the Self-Optimizing Plant vision

Industrial AI Infrastructure Bridges IT and OT: AIoT Hub

Enterprise Visualization & Workflow

- **Aspen Enterprise Insights** — Enterprise Visualization and Collaborative Workflow

Industrial AI Apps

- **Aspen AI Model Builder™**
- **Aspen Event Analytics™**
- Aspen Industrial AI Models and Agents
- Customer and Partner Purpose-Built Apps
- 3rd Party / Custom

Enterprise Speed & Scale

- **Aspen Cloud***
  - **Model Productization** — Training, versioning, embedding, deploying, updating and sustainment…at scale
  - **Data Management** — Cleaning, conditioning, enrichment, processing and storage of…billions of data points
  - **Data Ingestion** — Large-scale ingestion and aggregation…across diverse data sources
- **Aspen Industrial AI Workbench**
  - **Aspen Data Science Studio**
  - **Aspen IoT Analytics Suite**
  - Machine Learning Libraries (scikit-learn, Keras, Spark, jupyter, TensorFlow, python, PROPHET)

Connectivity & Edge Computing

- **Aspen Connect** — Connectivity Framework and Intelligent Edge

Enterprise Data Sources

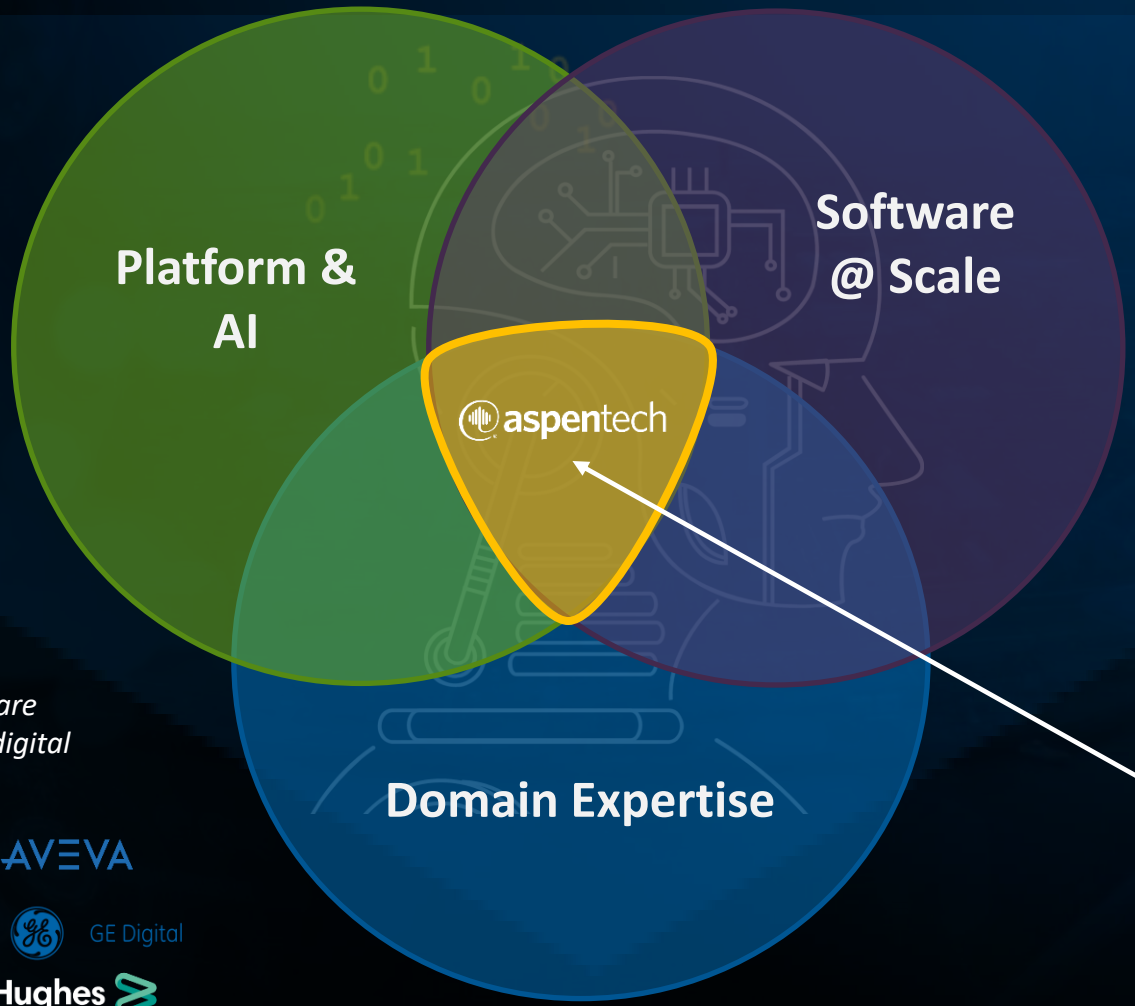
- **Aspen Data**
- Aspen Apps
- Historians
- HEXAGON PPM
- IIoT
- ERPs
- EAMs
- www

*Cloud platform to host and manage Industrial AI Applications (Not licensable)

The Paradigm of Industrial AI: A Competitive Advantage

C3.ai
Amazon Machine Learning
UPTAKE
Azure Machine Learning Studio
sparkcognition

Democratize access to AI/ML frameworks, toolkits



AWS
Azure
databricks

Digital infrastructure providers

Traditional software vendors shifting to digital technology

AVEVA
Honeywell
GE Digital
Baker Hughes

Industrial AI

aspenONE® V12™

aspenONE V12 Highlights

Aspen Hybrid Models™	Aspen Maestro™	Aspen Deep-Learning IQ™	Aspen Multi-Case™	Aspen MES Collaborative™	Aspen Event Analytics™
Combine AI, 1st Principles & Domain Expertise Model complex processes Comprehensive & more accurate models without significant expertise	Automate the development of better models faster Tune models with less expertise New capability for both Aspen Mtell & DMC3	Build more accurate models and predictions more easily Cover a wider range of operations–linear & nonlinear Advanced AI Capability	Easily run dozens of simulation cases concurrently More complete analysis Use results to navigate complexity in operations	Aggregate data with Enterprise-level Historian Eliminate stranded data—Connect small sites High-availability minimizes data loss – 24x7x365	Investigate unexpected production events Take safer and faster corrective action and decision making SaaS-based Solution

and much more…

Asset Performance Management Suite

APM Strategy

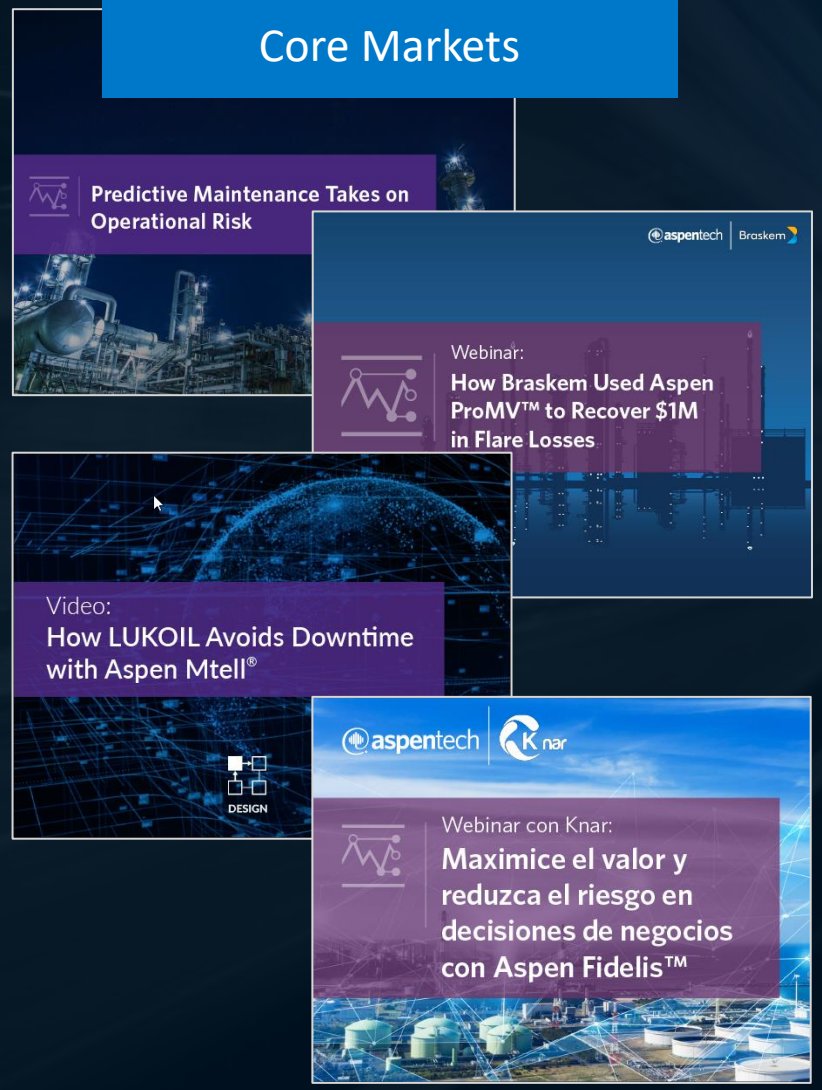
- Dedicated team aligned on growth
- Speed to market and market penetration
- Marketing
  - Education, dissemination, validation
- Leading technical capabilities
- Customer success — value
- Ambitious vision — APM 4.0
- Partner ecosystem for scale

APM Customer Success

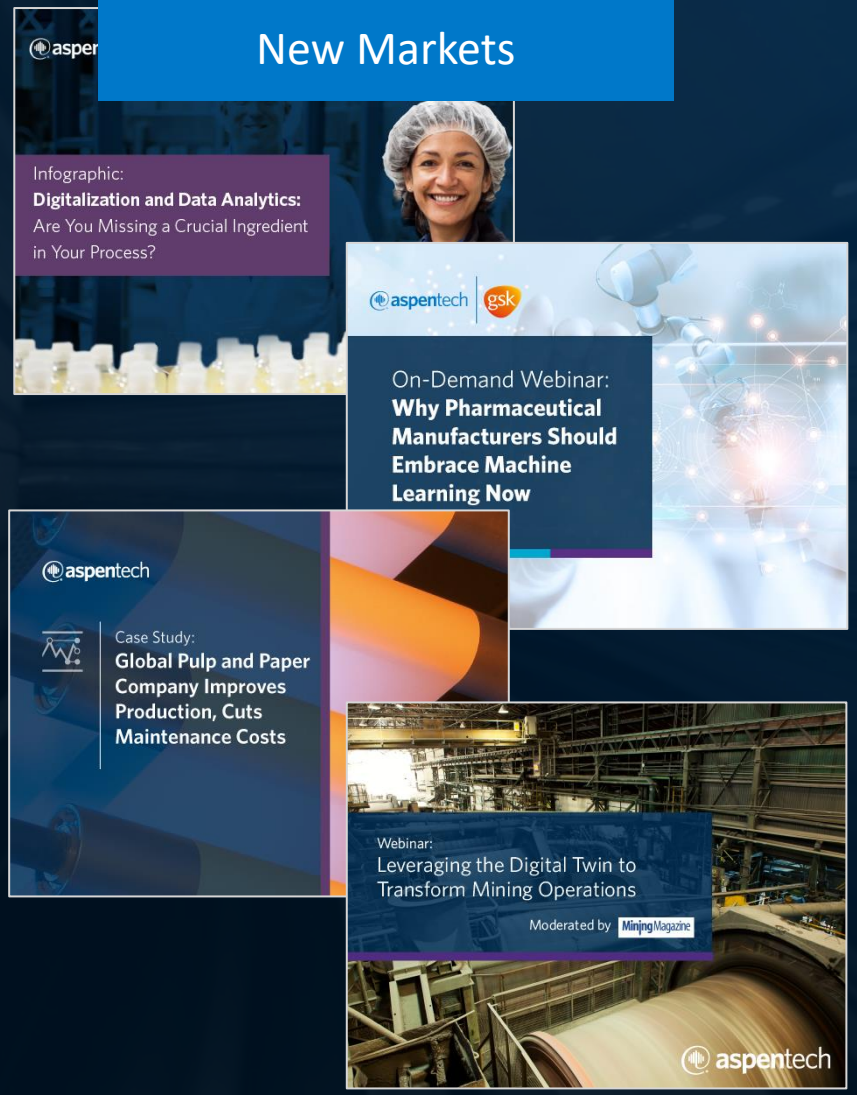
- Growing catalog of value captured from Aspen Mtell® throughout installed base
- Comprehensive coverage of assets — impacting production, safety and sustainability
- Increasing number of successful pilots completed
- Aspen ProMV™, Aspen Event Analytics™ and Aspen Maestro™ for Aspen Mtell all recently introduced to market — provide holistic view of the plant health
- 100+ customers across over 30 countries

APM Customer Engagement

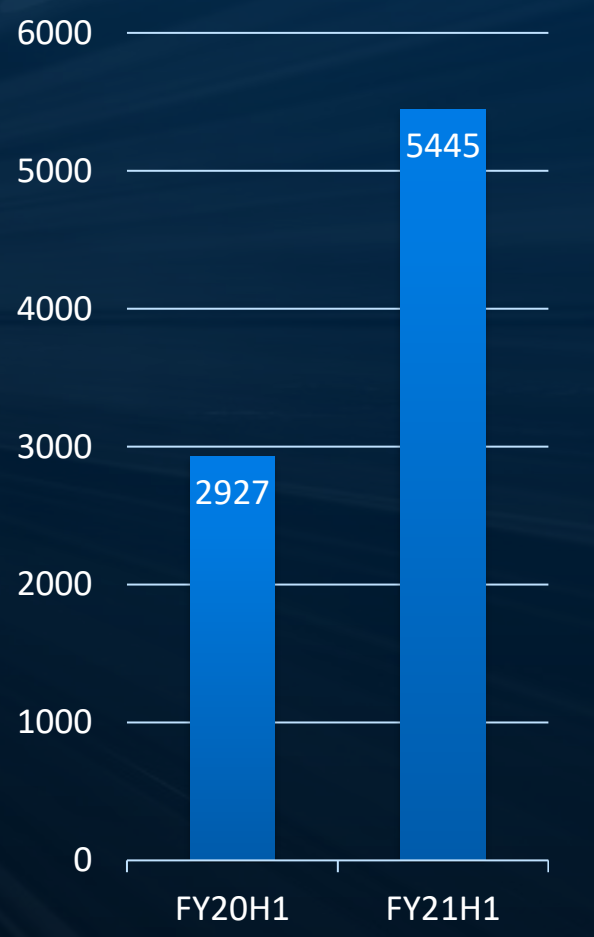
Core Markets



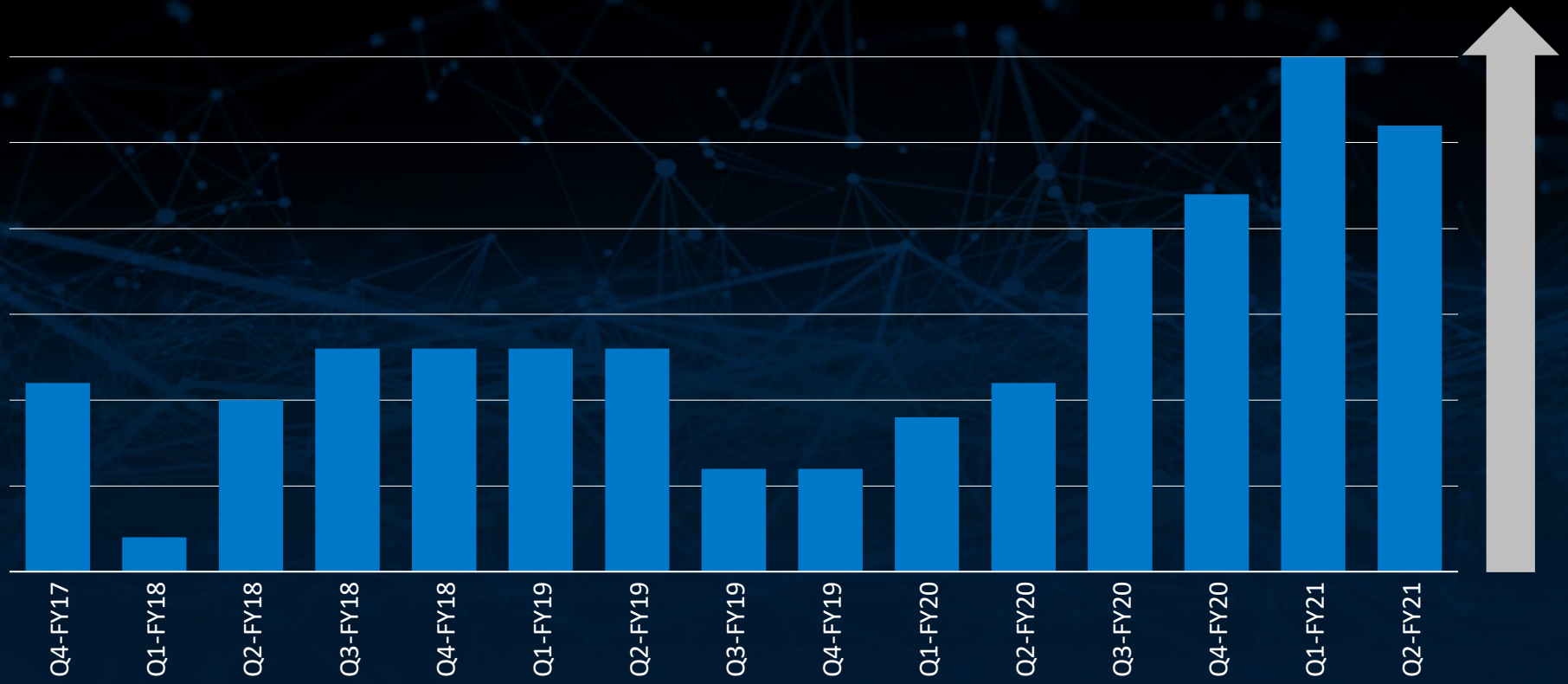
New Markets



Customer Registrations



APM Pilots Trend — Completed Pilots



Planned Maintenance Spend Deferred to H2

COMMODITIES NEWS FEBRUARY 4, 2021 / 3:59 PM / UPDATED 5 DAYS AGO

REUTERS

Lack of overhauls at U.S. refiners could stall industry recovery

By Laura Sanicola, Erwin Seba

NEW YORK/HOUSTON (Reuters)

in fuel demand in the second half of

workers are expected to resume com

But Marathon forecast first-quarter spending of $150 million on planned maintenance, less than half its year-ago period budget. Phillips 66 estimated $200 million to $230 million in turnaround costs this quarter, versus $329 million a year ago.

Lower costs could reflect reduced stress from lower output on equipment, or stretching out work and limiting overtime, said Matthew Blair, a refining analyst at Tudor, Pickering, Holt & Co.

Production will fall when maintenance begins, said Bob Yawger, director of futures for financial firm Mizuho Americas. He forecast fuel output falling another 6.5 percentage points from January's 82.5% peak utilization.

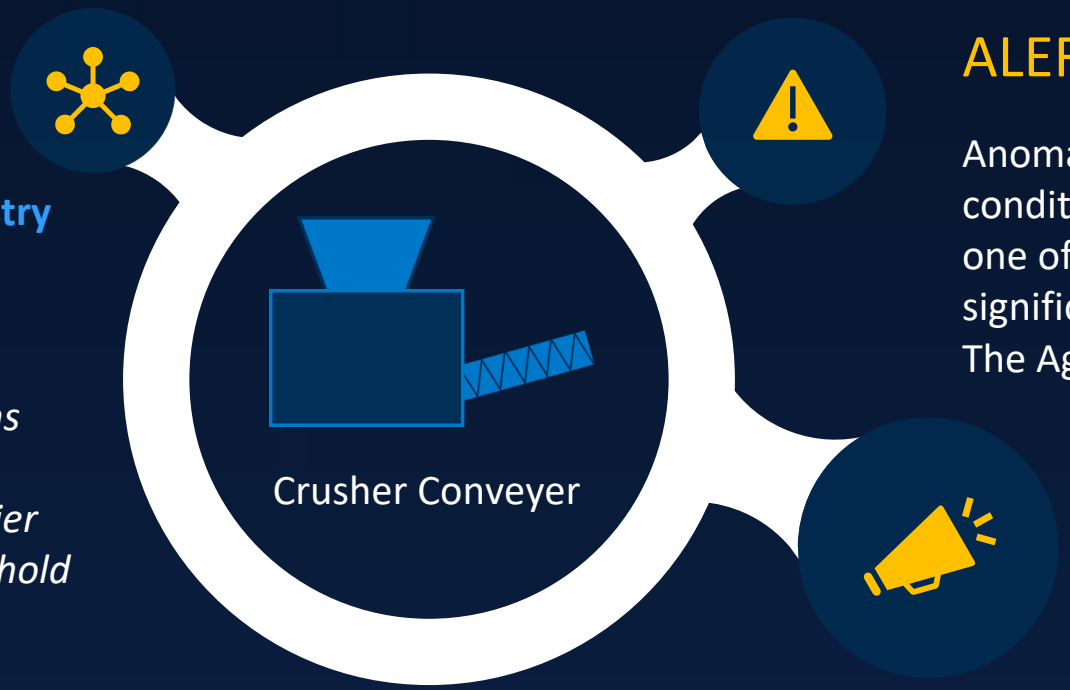
"No matter how you cut it, turnaround season is simply a matter of time," Yawger said on Jan. 27. "How far the refinery run rate slides is the only question."

Aspen Mtell Detects Gearbox Failure on Primary Crusher Conveyor

CATCH

ASSET/AGENT OVERVIEW

Metals and Mining Industry
Crusher Conveyor
Anomaly Agent
detects a deviation from normal operating patterns (across time and many sensors) warning far earlier than single tag DCS threshold alarm.



ALERT/PRESCRIPTION

Anomaly Agent detected an abnormal condition and revealed sensor ranking for one of the three motor currents as most significant.
The Agent requested an inspection.

ACTION

The inspection found a drive synchronization issue that was caused by a lubrication imbalance in the motor/ gearbox system.

Oil imbalance was corrected avoiding a gearbox and/or coupling failure.
A new Failure Agent will warn much earlier of a recurring problem.

VALUE

Taking early, less-intrusive action prevented a major breakdown on the order of $500,000 in terms of maintenance costs and production losses.

Aspen Mtell Detects Fouling in Steam Cracker Furnace

CATCH

ASSET/AGENT OVERVIEW

Chemicals Industry
Steam Cracker Furnace
Anomaly & Failure Agents
detects complex degradation patterns (across time and many sensors) warning far earlier than single tag DCS threshold alarm.

ALERT/PRESCRIPTION

Aspen Mtell Anomaly and Failure Agents detected multi-variate signals showing process degradation of the cracker furnace.
Agents requested inspection.

ACTION

Inspection confirmed furnace fouling.

Maintenance intervention was strategically scheduled to minimize production impacts while reducing downtime due to required repairs.

Aspen Mtell to be used to predict the need for furnace maintenance in real-time.

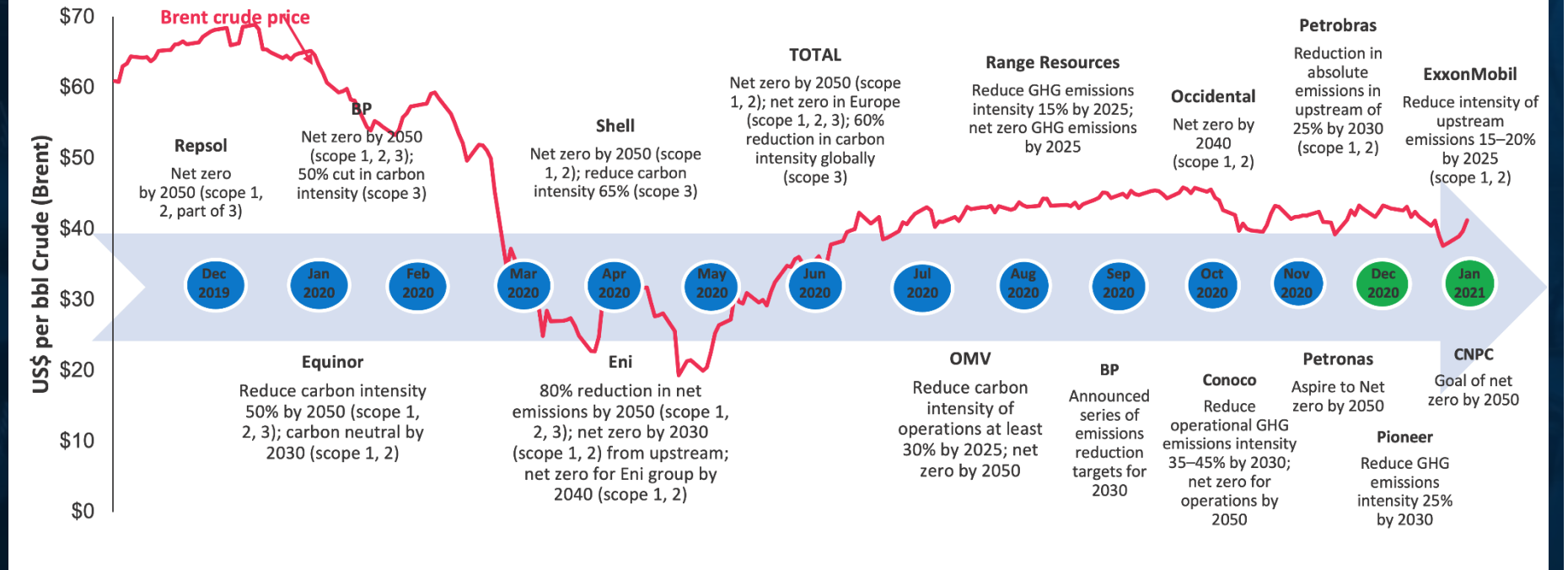
VALUE

Aspen Mtell allowed the customer to avoid 2 days of downtime per year, per furnace. This equated to €1.7M in losses. The advanced warning also provided additional energy savings and extended the lifetime of the furnace.

Sustainability

Ambitious Emissions Targets for Oil, Gas and Chemical Companies

Announcements of oil company GHG emissions reduction and net-zero commitments



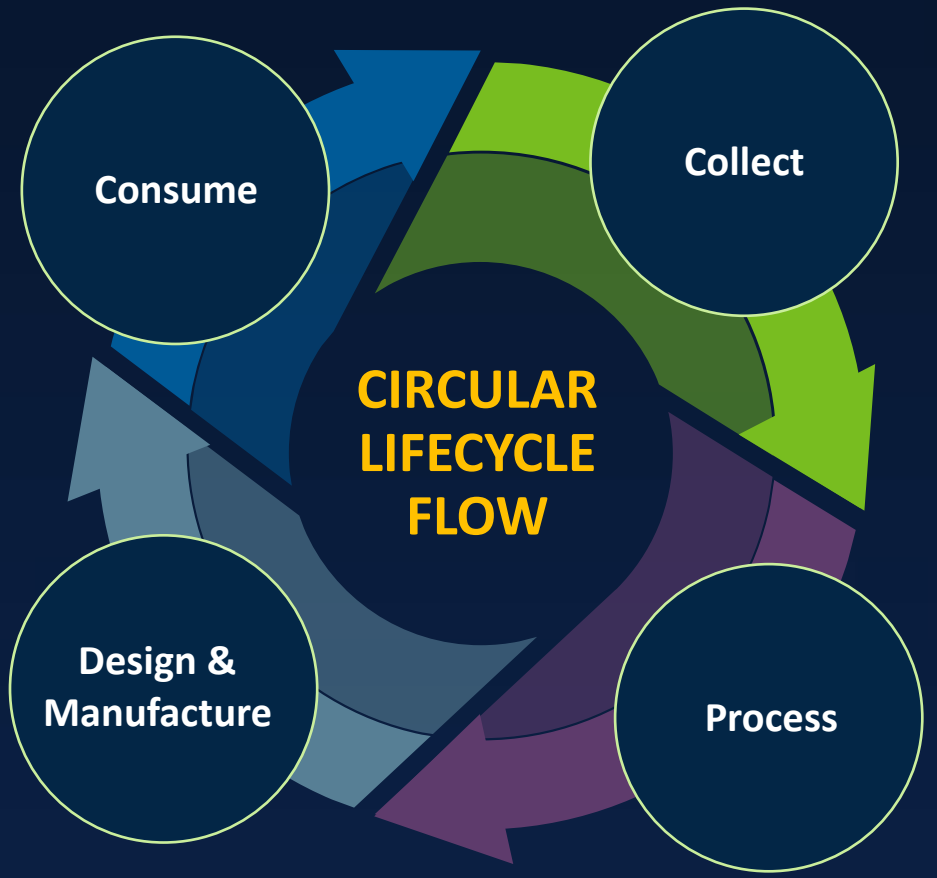
Source: Chemical and Engineering News, *World Chemical Outlook 2021*, January 11, 2021

Varying ambitions

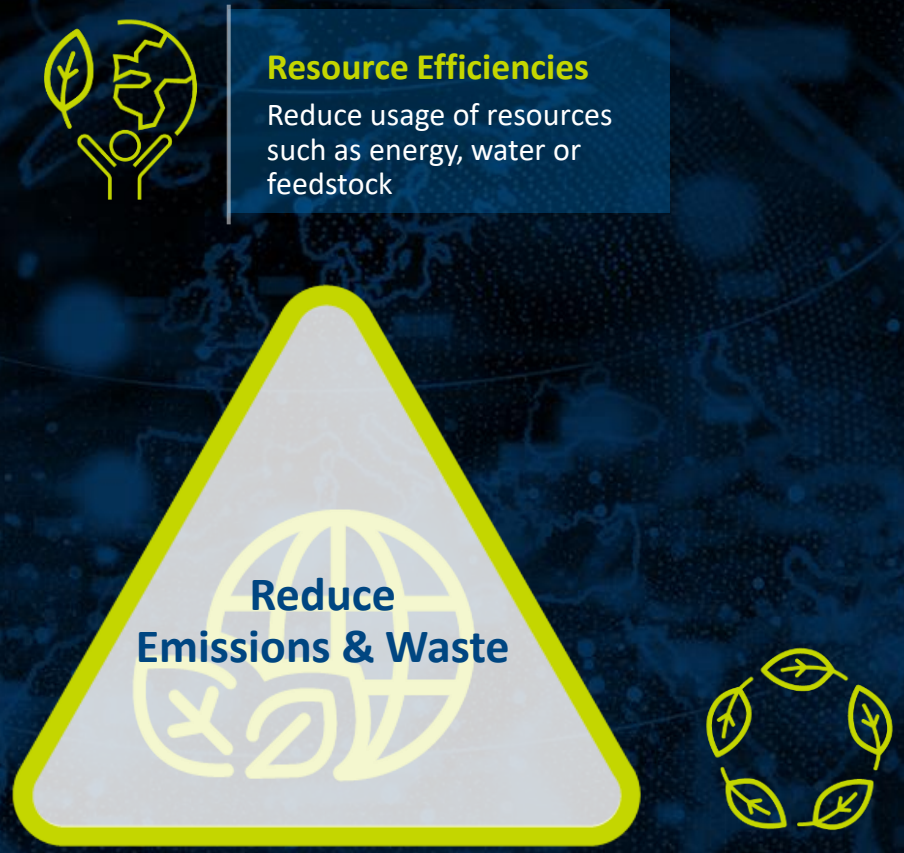
Carbon-reduction targets for 25 chemical companies fall into three categories.

Company	Target	Target date
Modest: Carbon-neutral growth		
BASF	Maintain 2018 levels	n/a
ExxonMobil Chemical	Maintain 2020 levels	n/a
LG Chem	Maintain 2019 levels	n/a
Moderate: Near-term carbon reduction		
Air Liquide	30% reduction versus 2015	2025
Braskem	58% reduction versus 2008	2030
Covestro	50% reduction versus 2005	2025
Evonik Industries	50% reduction versus 2008	2025
Linde	35% reduction versus 2018	2028
Lotte Chemical	26% reduction versus 2013	2028
LyondellBasell Industries	15% reduction versus 2015	2030
Mitsui Chemicals	25% reduction versus 2005	2030
Sabic	25% reduction versus 2010	2025
Shin-Etsu Chemical	55% reduction versus 1990	2025
Solvay	26% reduction versus 2018	2030
Sumitomo Chemical[a]	30% reduction versus 2013	2030
Toray Industries	30% reduction versus 2013	2030
Ambitious: Net zero by 2050		
Chemours	Carbon negative	2050
Dow	Carbon neutral	2050
DuPont	Carbon neutral	2050
Eastman Chemical	Carbon neutral	2050
Mitsubishi Chemical	Carbon neutral	2050
PetroChina	Near carbon neutral	2050
Reliance Industries	Carbon neutral	2035
Sinopec	Carbon neutral	2030
Yara	Carbon neutral	2050

Circular Economy – a Sustainability Priority



Sustainability in Capital-Intensive Industries



Resource Efficiencies

Reduce usage of resources such as energy, water or feedstock

Energy Transition & Decarbonization

Renewable/alternative energy sources, biofuels

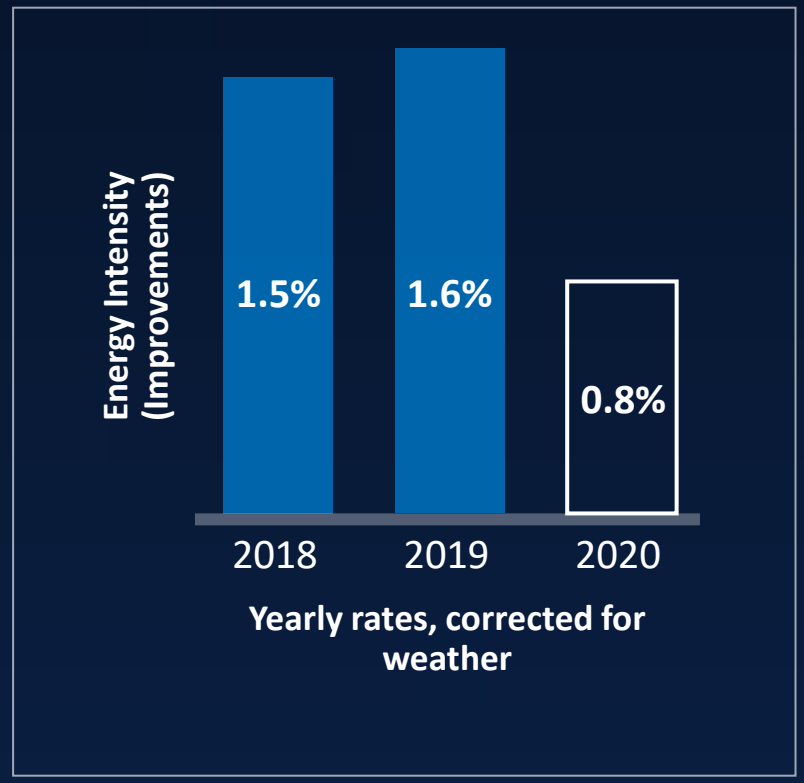
Circular Economy

Waste reduction, recycling, renewable feedstocks, innovation

Energy Efficiency Drops to Slowest Rate in a Decade: IEA

Energy Efficiency Stalling

Energy efficiency is expected to deliver more than 40% of the reduction in energy-related greenhouse gas emissions over the next 20 years.



Climate Change Impact

"Well below the level needed to achieve global climate and sustainability goals."

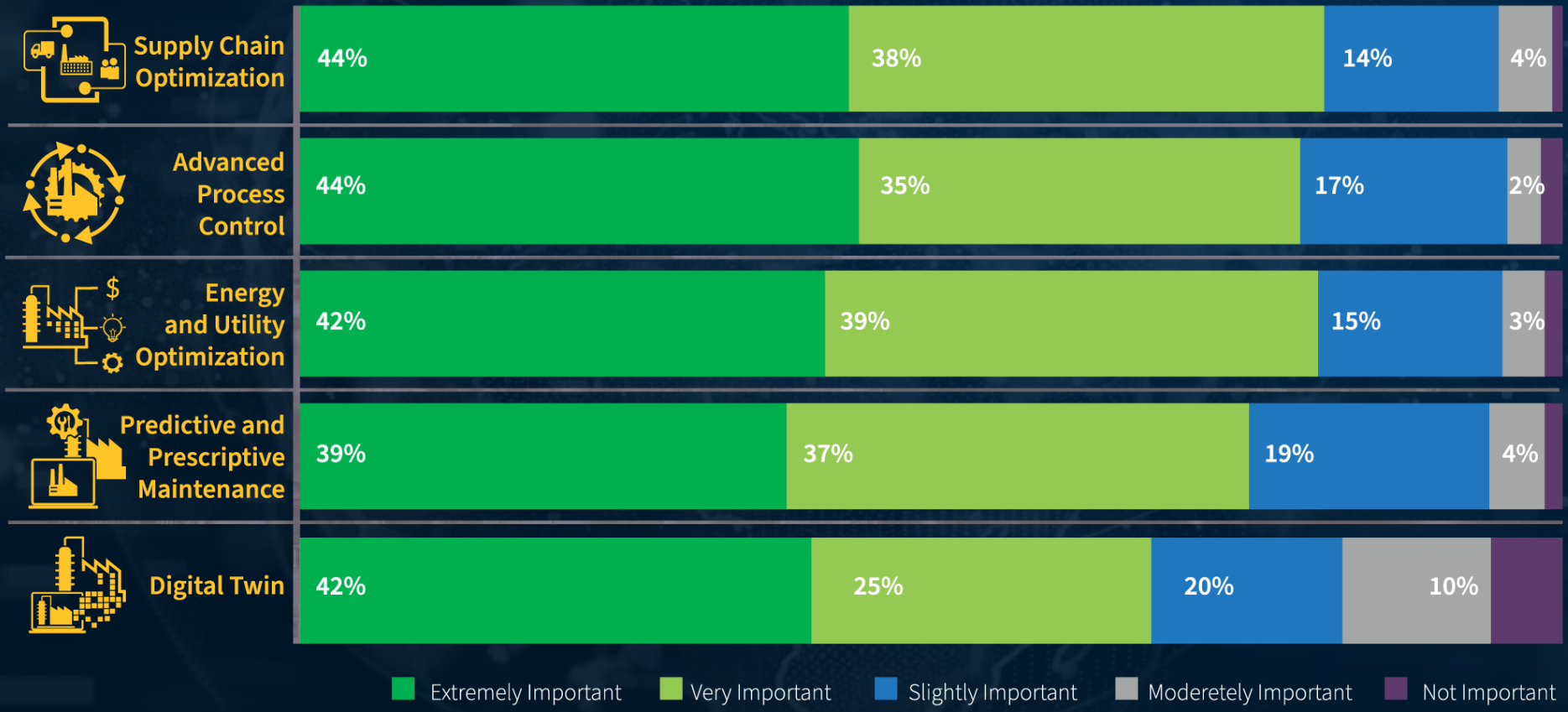
"Energy efficiency should be at the top of to-do lists for governments pursuing a sustainable recovery—it is a jobs machine, it gets economic activity going, it saves consumers money, it modernizes vital infrastructure and it reduces emissions." IEA Press release, December 3, 2020

Source: IEA Energy Efficiency Report 2020

Technology is Critical to Progress Sustainability through Efficiencies

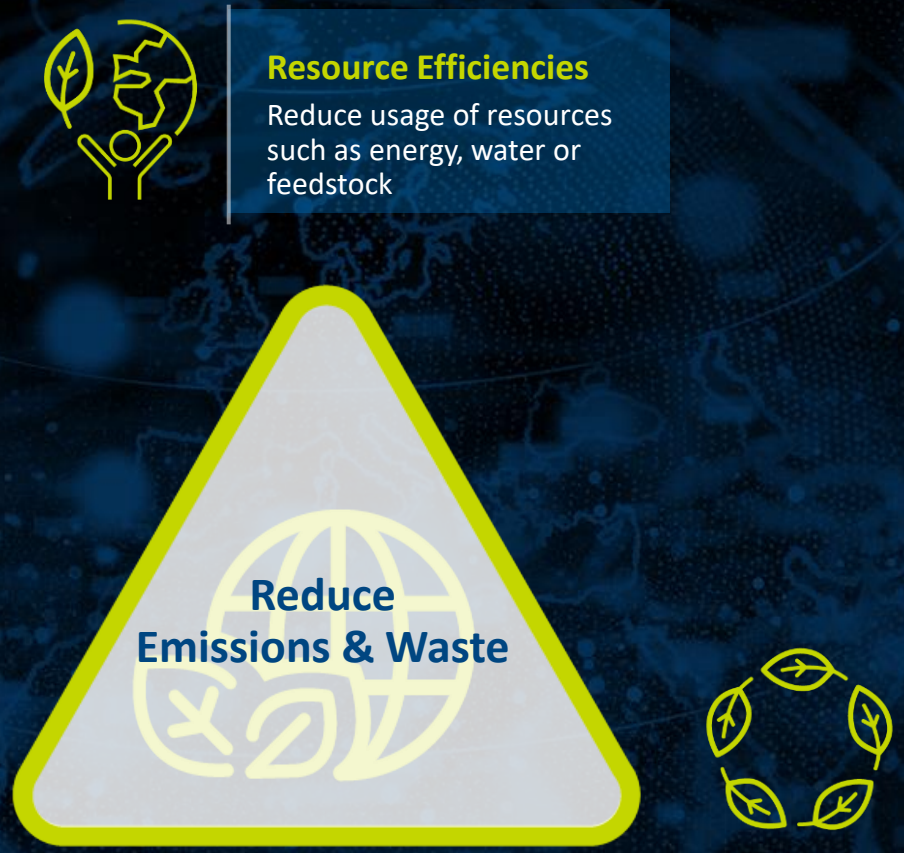
Question:

How valuable are these **Digital Technologies** for improving sustainability?



Source: *The Sustainability Future for Energy and Chemicals*, ARC Strategies Research with Aspen Technology 2020

Sustainability in Capital-Intensive Industries



Resource Efficiencies

Reduce usage of resources such as energy, water or feedstock

Energy Transition & Decarbonization

Renewable/alternative energy sources, biofuels

Circular Economy

Waste reduction, recycling, renewable feedstocks, innovation

SESAME Life Cycle Assessment

Example — Transportation System

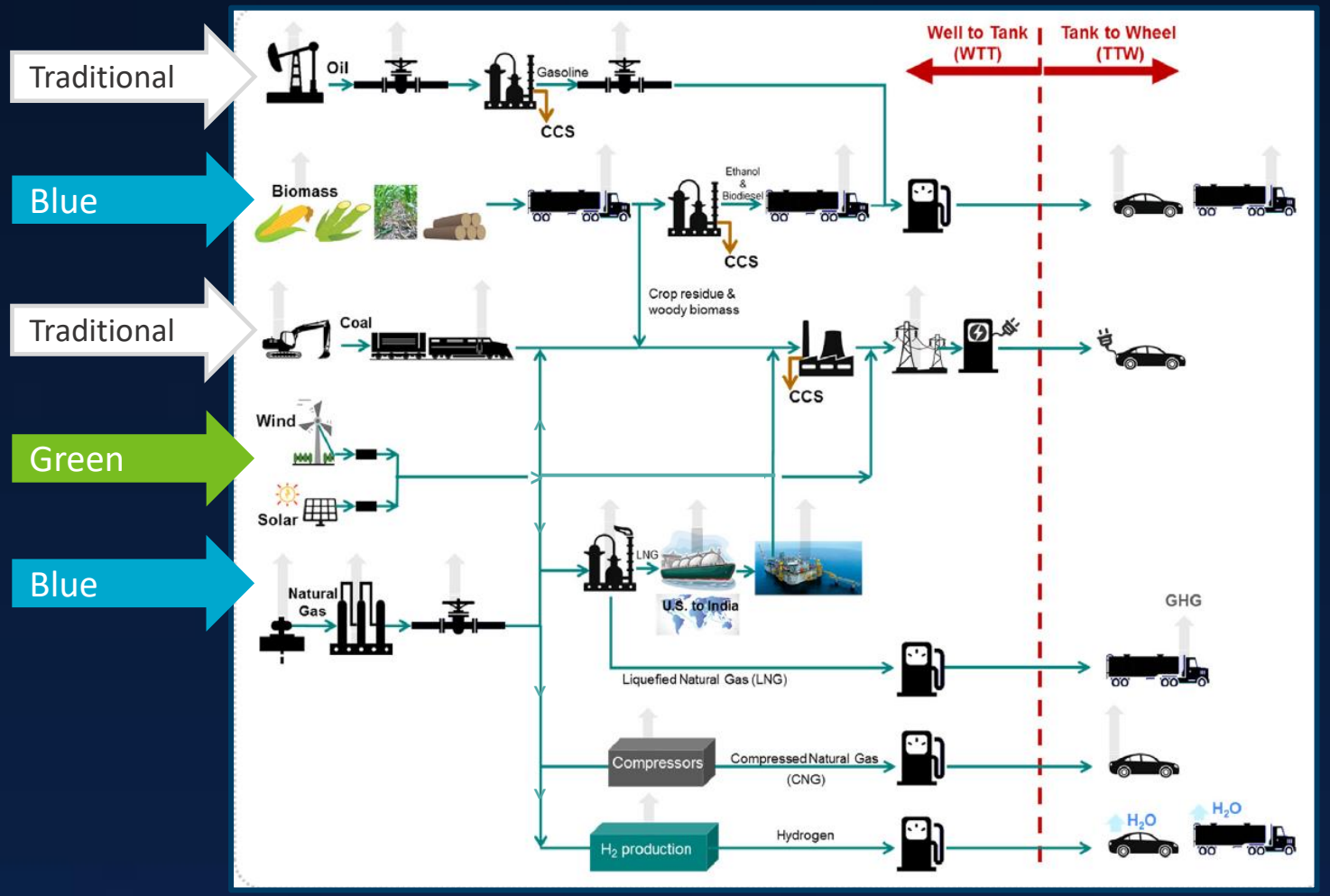


Fig. An example of a transportation system studied by SESAME (system-level LCA).[1]

Blue – Customers

أرامكو السعودية saudi aramco

سابك sabic

Shell

DOW

AIR PRODUCTS

Green – Customers

TransAlta

SARAS

AIR PRODUCTS

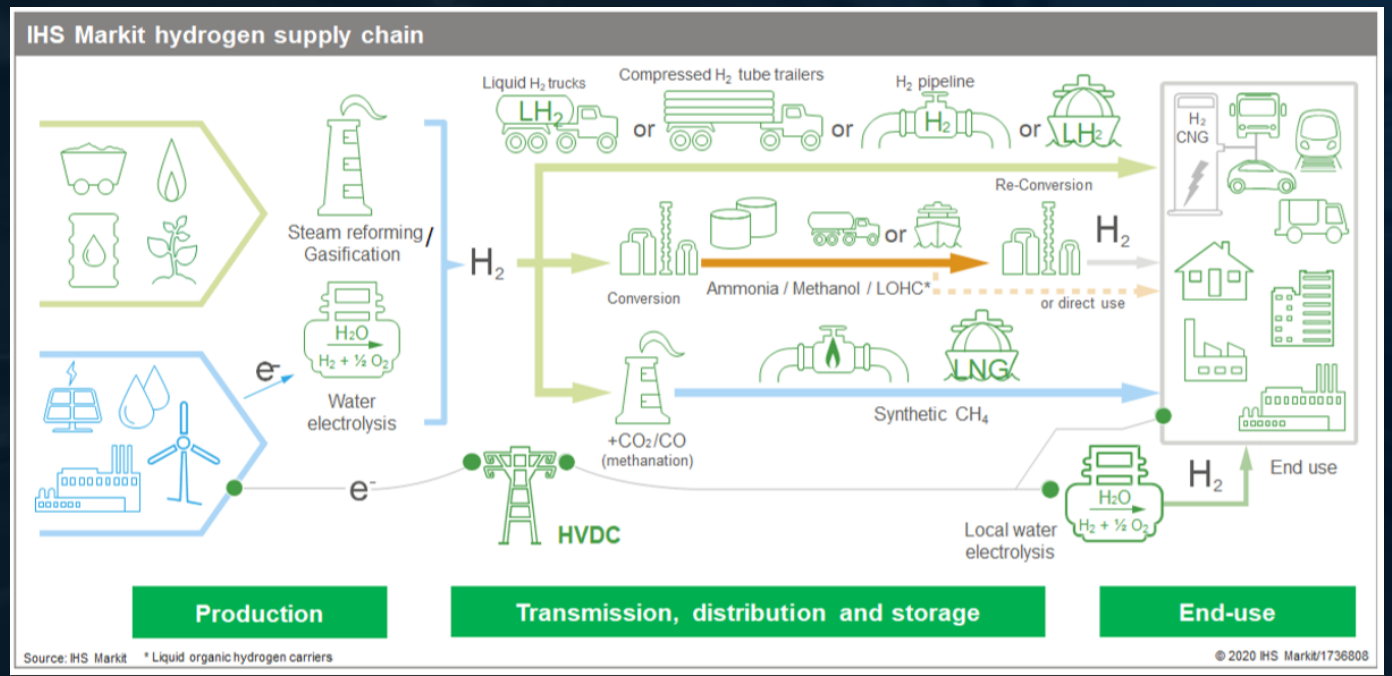
CTBE

Pan Pacific

[1]"Sustainable energy system analysis modeling environment: Analyzing lifecycle emissions of the energy transition"; Gençer, Torkamani, Miller, Wenzhao Wu, O'Sullivan Jul 2020 (https://doi.org/10.1016/j.apenergy.2020.115550)

Solutions for the Hydrogen Supply Chain

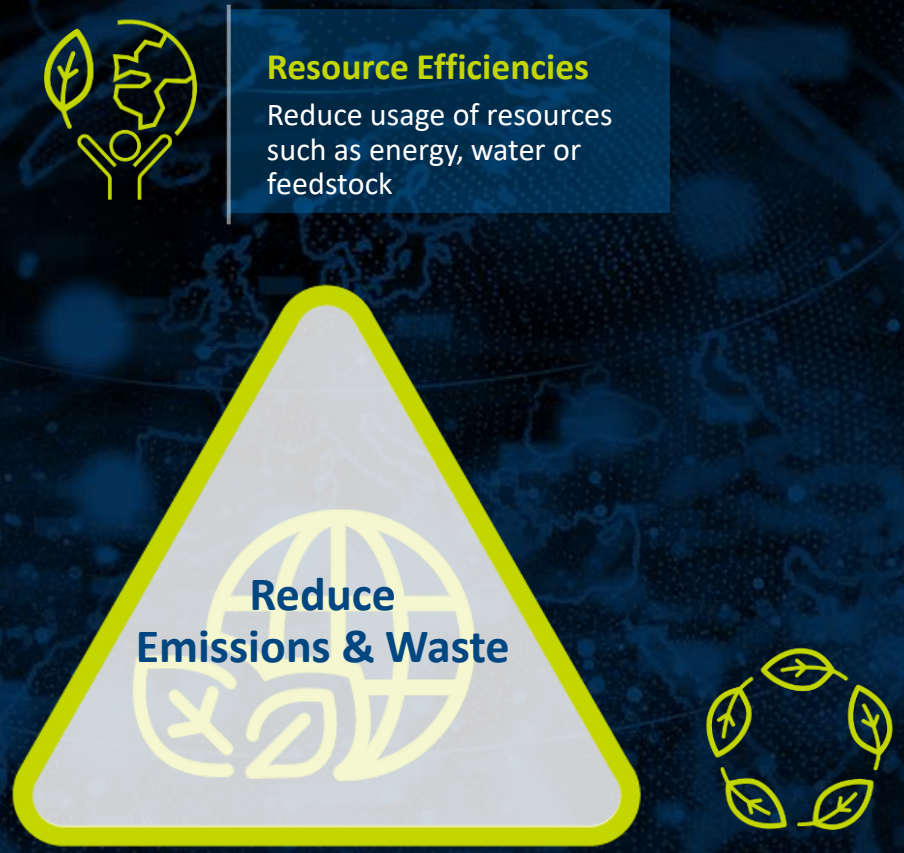
- *There is significant potential for emissions reductions from clean hydrogen.* IEA report (June 2019)



https://ihsmarkit.com/research-analysis/the-role-of-hydrogen-in-a-deeply-decarbonized-future.html

- **Hydrogen Production**
  - Green Hydrogen — **Aspen Plus® with ACM and Aspen HYSYS®** simulate electrolysis processes
  - Blue Hydrogen — **Aspen Plus with ACM and Aspen HYSYS** simulate thermal processes with carbon capture
- **Hydrogen Distribution**
  - **Aspen Plus and Aspen HYSYS** simulate conversion processes
  - **Aspen Supply Planner™** optimizes production and distribution
- **Hydrogen Storage**
  - **Aspen Plus and Aspen HYSYS** simulate physical-based storage such as cryogenic processes
- **Hydrogen Usage**
  - **Aspen Plus with ACM** simulate various fuel cell processes

Sustainability in Capital-Intensive Industries



Resource Efficiencies

Reduce usage of resources such as energy, water or feedstock

Energy Transition & Decarbonization

Renewable/alternative energy sources, biofuels

Circular Economy

Waste reduction, recycling, renewable feedstocks, innovation

Chemical Recycling

Core Processes Can be Modeled With Aspen Plus®

Pyrolysis

This process breaks down the macrostructure of the polymer to form smaller molecules at moderate to high temperature. Products can be decomposed into three fractions: gas, liquid and solid residue.

3 Polyvinyl Chloride (PVC/V)

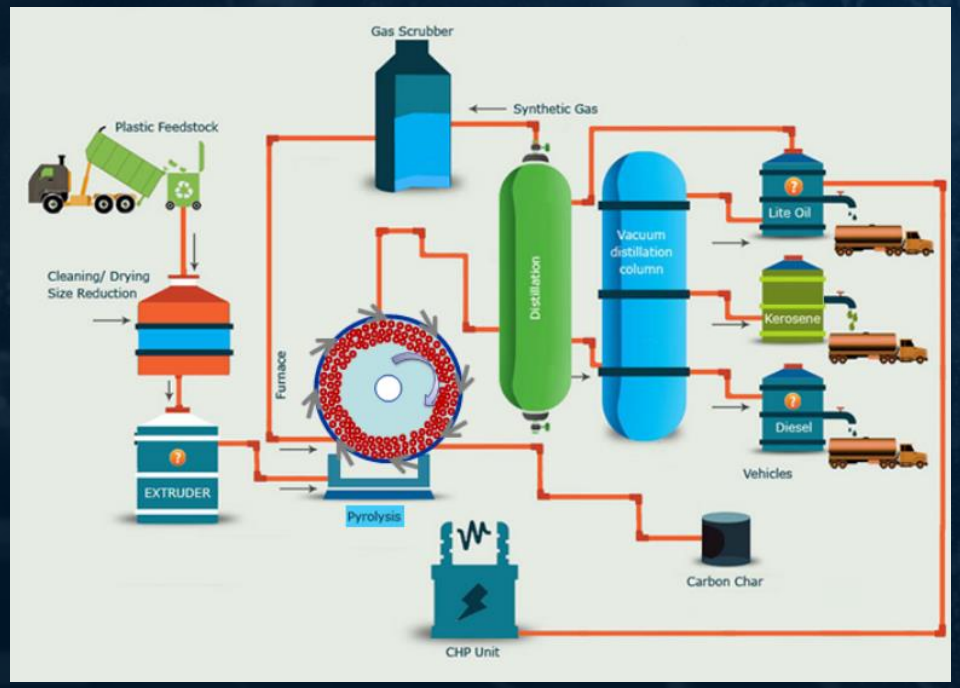
Window cleaner and detergent bottles, shampoo bottles, clear food packaging, wire jacketing, medical equipment, siding, windows, piping; etc.

4 Low Density Polyethylene (LDPE)

Squeezable bottles; bread, dry cleaning and shopping bags; tote bags; carpet; etc.

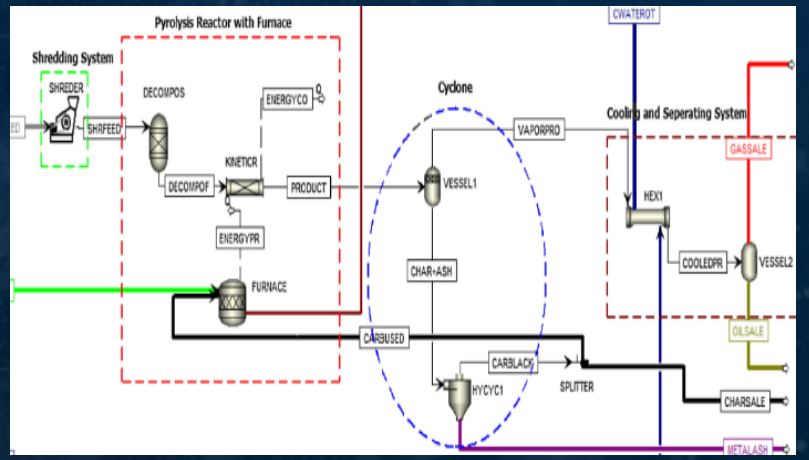
5 Polypropylene (PP)

Syrup bottles, ketchup bottles, straws, medicine bottles; etc.



Mechanical and chemical recycling of solid plastic waste
Waste Management, Volume 69, November 2017, Pages 24-58

Aspen Plus



Advantages

- Suitable for highly heterogeneous mixtures of plastics
- Simple technology

Challenges

- Complexity of reactions
- Requires high volumes to be cost effective
- Low tolerance for PVC
- Stable waste supply

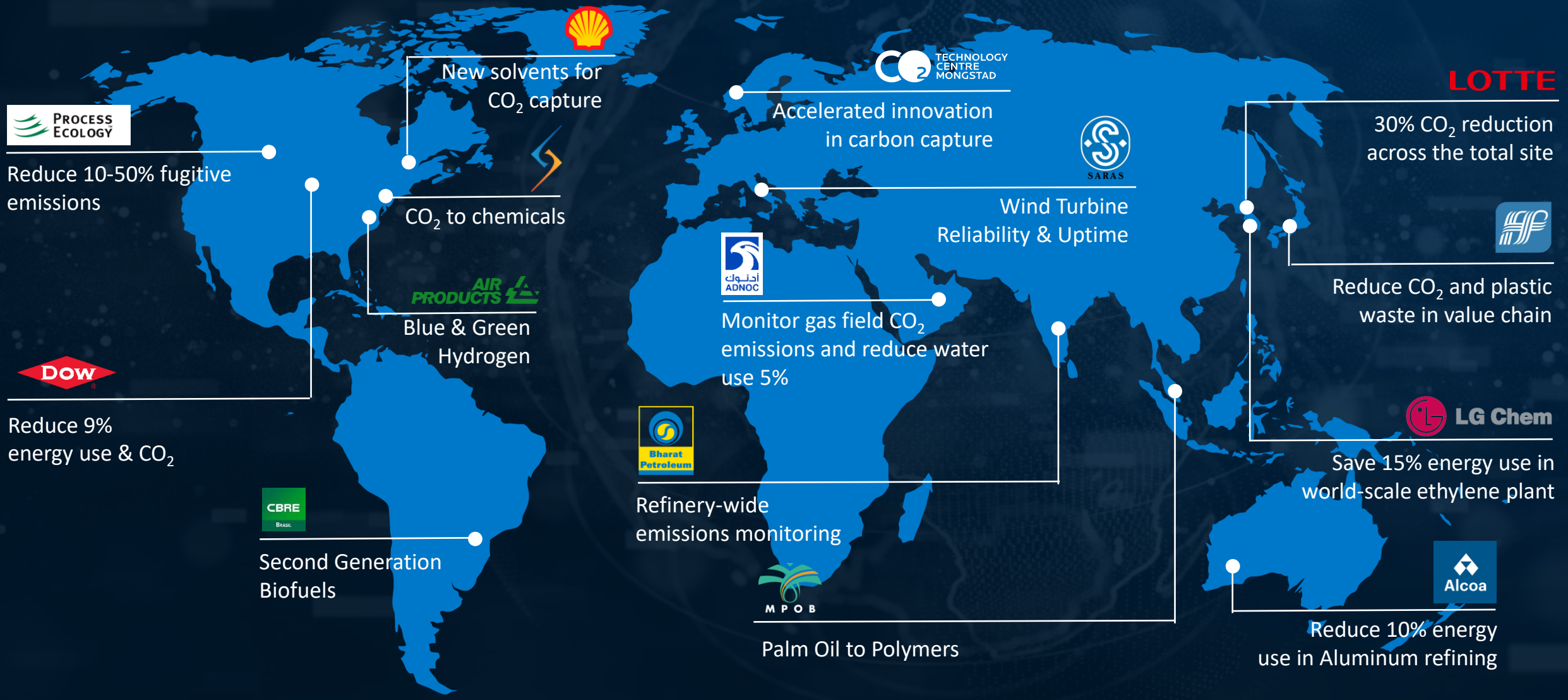
Award-Winning Technologies for Sustainability

- Winner of 2020 Green Supply Chain Award from SDC Executive publication for a project with FP Corporation that reduced CO_2 emissions by 135,000MT and waste by 375,000MT

- Bharat Petroleum wins ASSOCHAM Innovators Excellence Awards 2020 for real-time emission and efficiency monitoring and data acquisition using Aspen HYSYS®

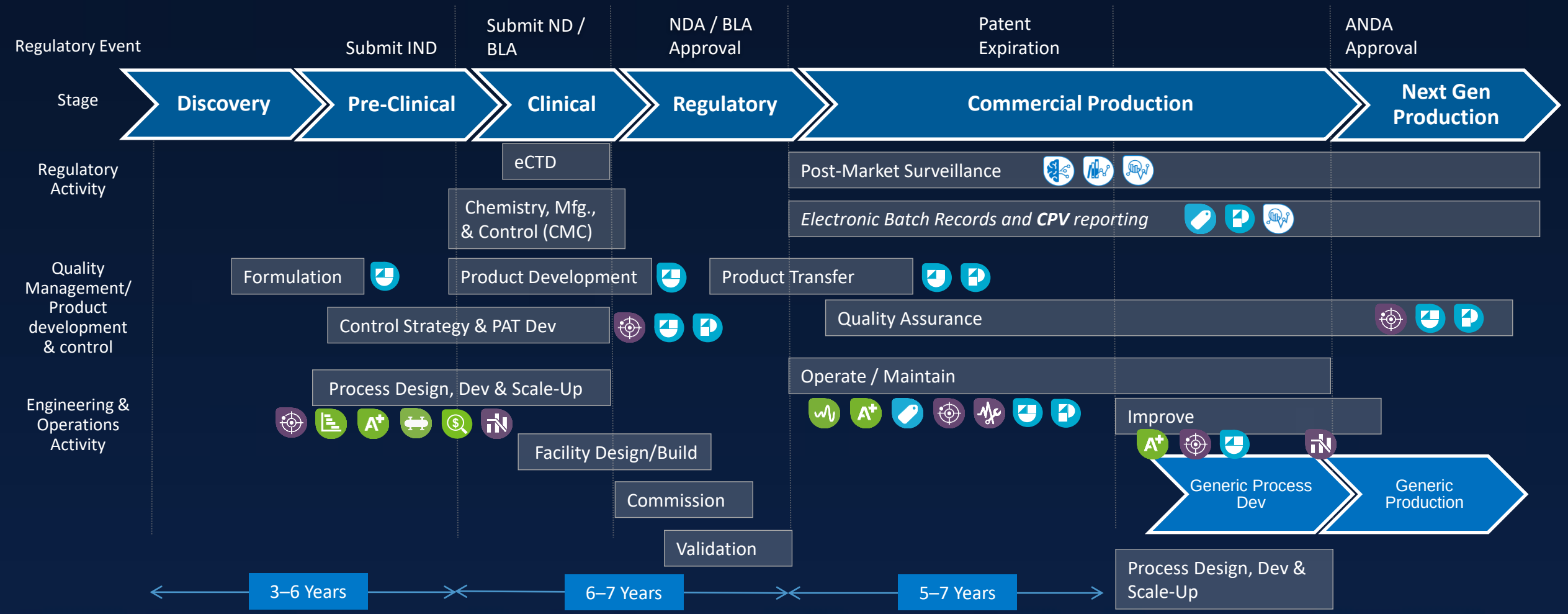
- Aspen Mtell® Wins Singapore Business Review Award for Predictive Maintenance—for preventing costly downtime and reducing the risk of unplanned emissions

AspenTech Established Track Record in Enabling Sustainability



Pharmaceuticals

Our Products Address Pain Points in the Life Sciences Lifecycle Today



Aspen Batch Process Developer
Aspen Plus
Aspen Exchanger Design & Rating
Aspen Economic Analysis (ACCE)
Aspen Mtell
Aspen Online
Aspen ProMV
Aspen Fidelis
Aspen IP.21 / MES
Aspen Unscrambler
Aspen Process Pulse
Aspen Enterprise Insights
Aspen Data Science Studio
Aspen IoT Analytics Suite

Lonza Implements Aspen Plant Scheduler™ to "Tame the Scheduling Beast"

Batch cycle time has been reduced from 7 to less than 5 days. While production output has increased by approximately 20%. No additional scheduling headcount has been required.

Ref: *"Taming the Scheduling Beast",* Pharmaceutical Manufacturing, J. O'Connor, Lonza, A. Sanford and F. Nasuti, AspenTech; Feb, 2010.

Lonza

20% Increase in production throughput

CHALLENGE

- Balance profitable operations and flexibility with changing customer demands
- Increase facility production and throughput
- Maintain scheduling staff at current levels
- Enhance Lonza's ability to respond to production upsets

SOLUTION

Scheduling Model Includes:

- 200 assets
- 3,000 activities
- Adherence to Current Good Manufacturing Practices (cGMP)
- Intricate timing of production activities
- Shared production equipment
- Uncertainty associated with growing mammalian cells

Product(s):
Aspen Plant Scheduler

AspenTech Products are Widely Used in the Pharmaceutical Industry

Camo Analytics Strengthened Our Offering to Pharma Industry

- 16 of the 20 largest pharma companies are now AspenTech customers
  - Strong pharma compliance domain knowledge
- Unique Product and Process Monitoring and Optimization
  - Differentiated analysis of spectroscopy and chemometrics
  - Good Manufacturing Practice (GMP) Ready Compliance (EU Annex 11 & 21CFR part 11)

Examples of Camo Analytics Applications

- Batch monitoring
- Blend monitoring
- Continuous manufacturing
- Drying optimization
- Fermentation monitoring
- Quality monitoring

Our Vision of the Future

Market Forces Demanding New Levels of Operational Excellence

Volatility

- Supply & Demand
- Energy Transition
- Macro Economics

$50-60 BBL
range of forecasts for 2021 oil prices

6-7 YRS
skills ramp-up

Workforce

- Skills Shortage
- Remote Workers
- Changing Expectations

Sustainability

- Climate and Environment
- Social Responsibility
- Governmental Policy

50%
reduction in carbon intensity[1]

Up to 30%
ROI[2]

Technology

- Industry 4.0 Technologies
- Connectivity
- Volume of Data

1. Targeted reduction in carbon intensity by 2050, or sooner (Source: BP Reimagining Energy Feb 2020);
2. ROI through digitalization investments, high returns in production throughput, maintenance, asset lifecycle. (Source: major Middle Eastern refiner, presented at ARC 2019)

Self-Optimization — Key Step in the Journey to the Smart Enterprise

SPREADSHEETS & IN-HOUSE TOOLS

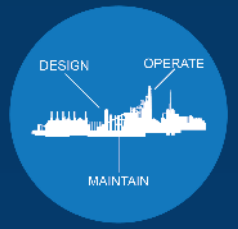
OPTIMIZE INDIVIDUAL DISCIPLINES

REAL-TIME INSIGHTS OPTIMIZE ACROSS DISCIPLINES

AI + DOMAIN INTELLIGENCE DRIVES CONTINUOUS IMPROVEMENT

NEW OPPORTUNITIES

1



2

3

4

5

MANUAL PROCESS IMPROVEMENT

ISOLATED IMPROVEMENT

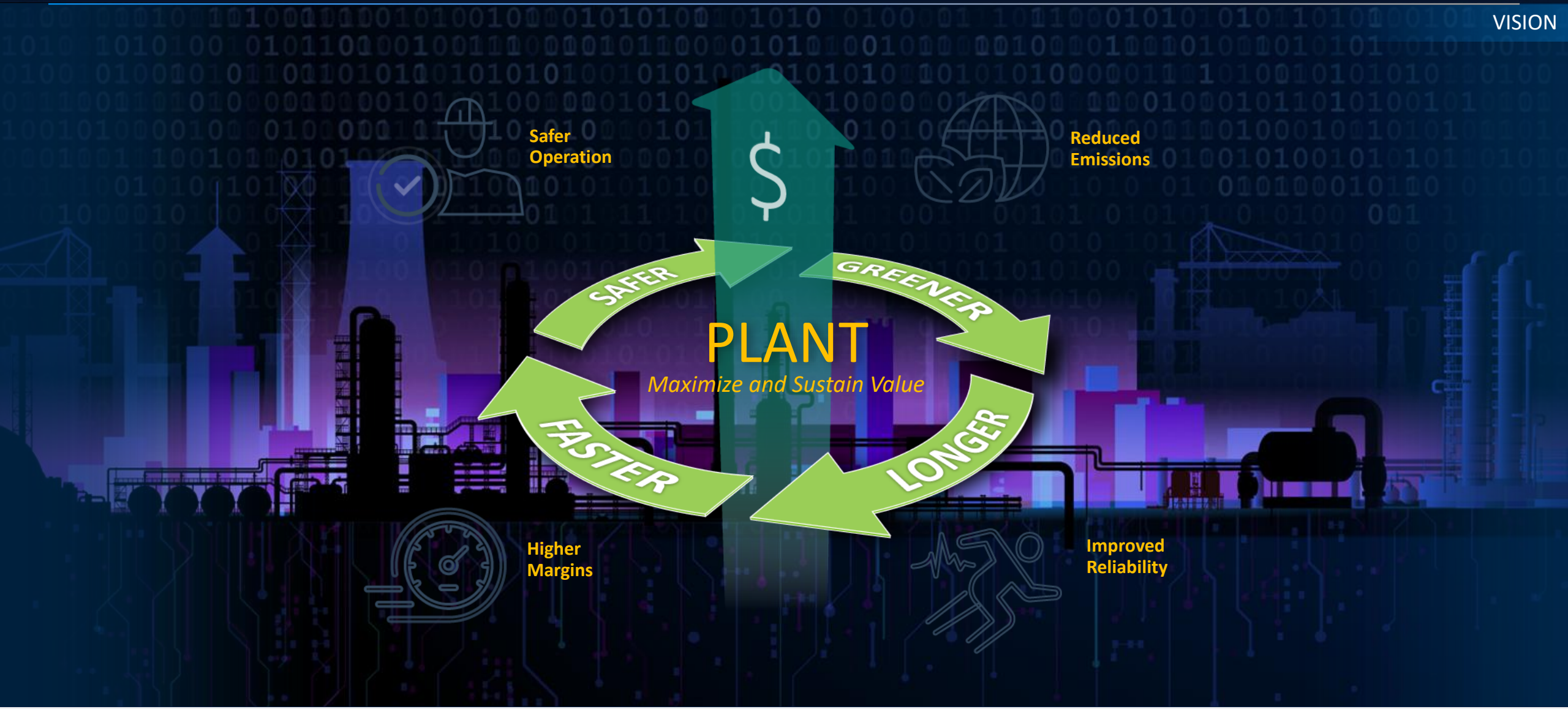
X-DISCIPLINE OPTIMIZATION

THE SMART ENTERPRISE

NEW BUSINESS MODEL

DIGITALIZATION JOURNEY

The Self-Optimizing Plant



The Self-Optimizing Plant

Self-learning, self-adapting and self-sustaining set of technologies and processes that work together to predict future state and prescribe or automate actions

Total Addressable Market (TAM)

Methodology

PRODUCTS

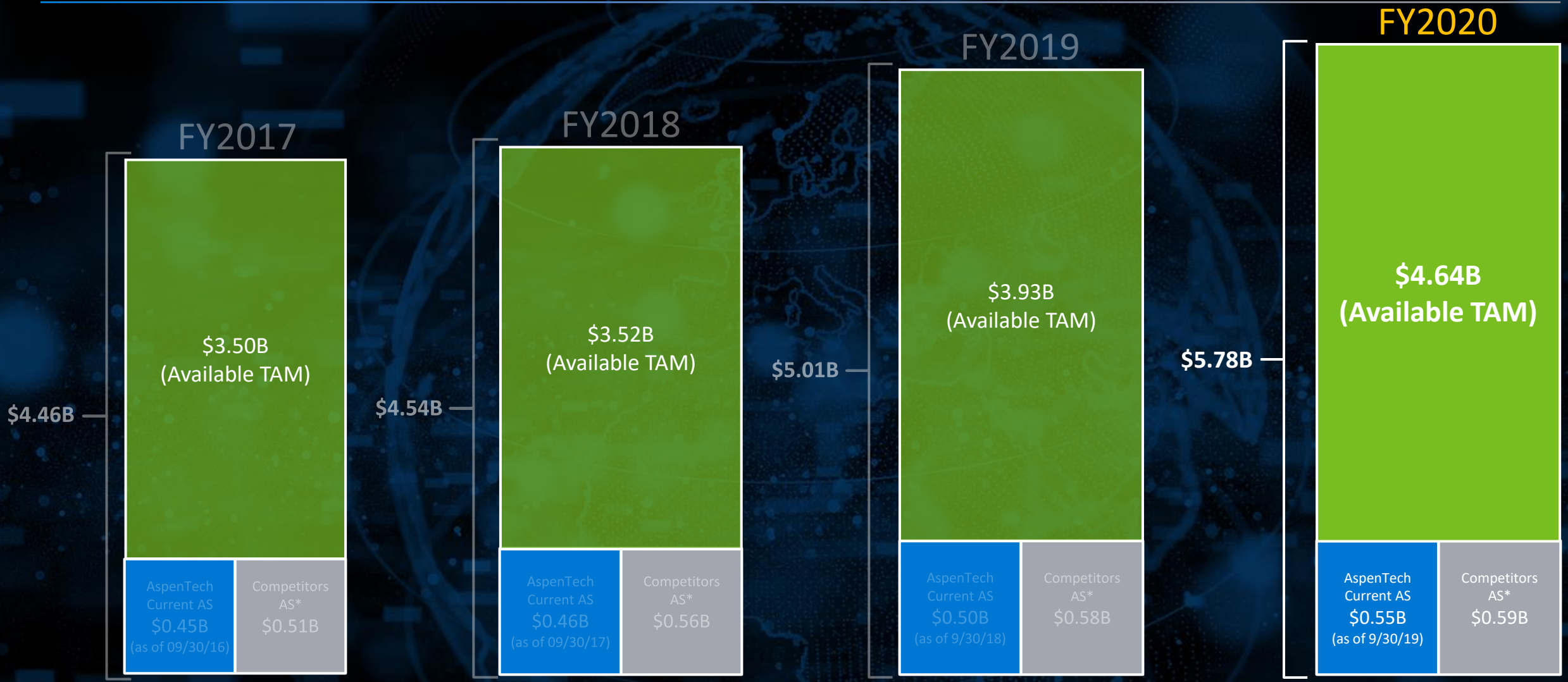
SITES

- Focus on top 500 accounts
- Calculate white space by site and product for each account
- Estimate Annual Spend Potential for each account
- Totals extrapolated to all accounts

What Drives TAM Expansion?

- Industry Growth
- Price Increases
  - 2-3% price escalation on average on term contracts
- Product Innovations (through v11)
- Expansion into New Market Segments

Potential TAM[1] (AS) — Grew by 15% from FY2019 to FY2020



1. Estimated by AspenTech from internal white space methodology on existing customer base

Expanding TAM Through Innovation and New Verticals (AS)

2018:

- ProMV – $157 million
- AORA Data Services (MSC) – $28 million
- Aspen Watch Centralized Monitoring (MSC) – $3 million
- Planning Model Update (ENG) – $34 million
- Fouling Monitoring of Preheat Exchangers (ENG) – $37 million

2019:

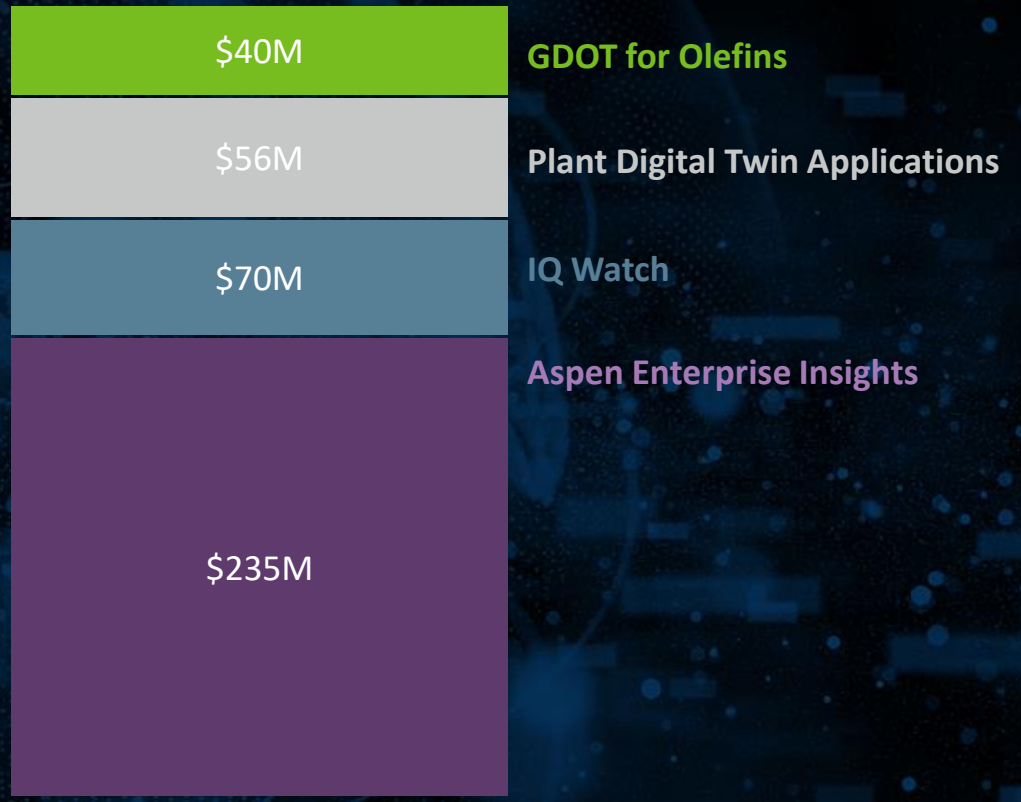
Innovation:

- GDOT Refining – $87 million
- OTS – $19 million

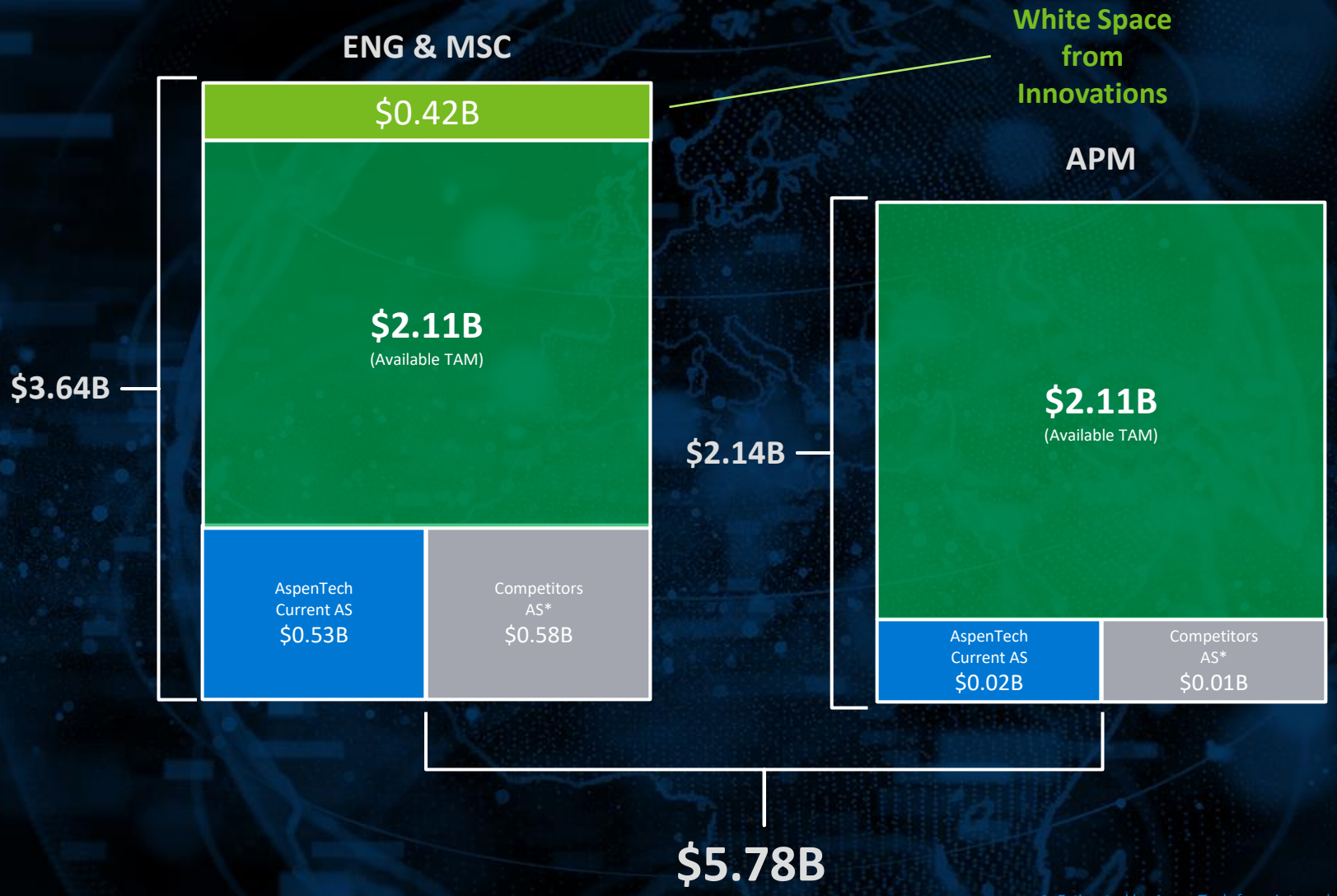
2020:

Innovation:

- Aspen Enterprise Insights – $235 million
- IQ Watch – $70 million
- Plant Digital Twin Online Applications – $56 million
- GDOT for Olefins – $40 million

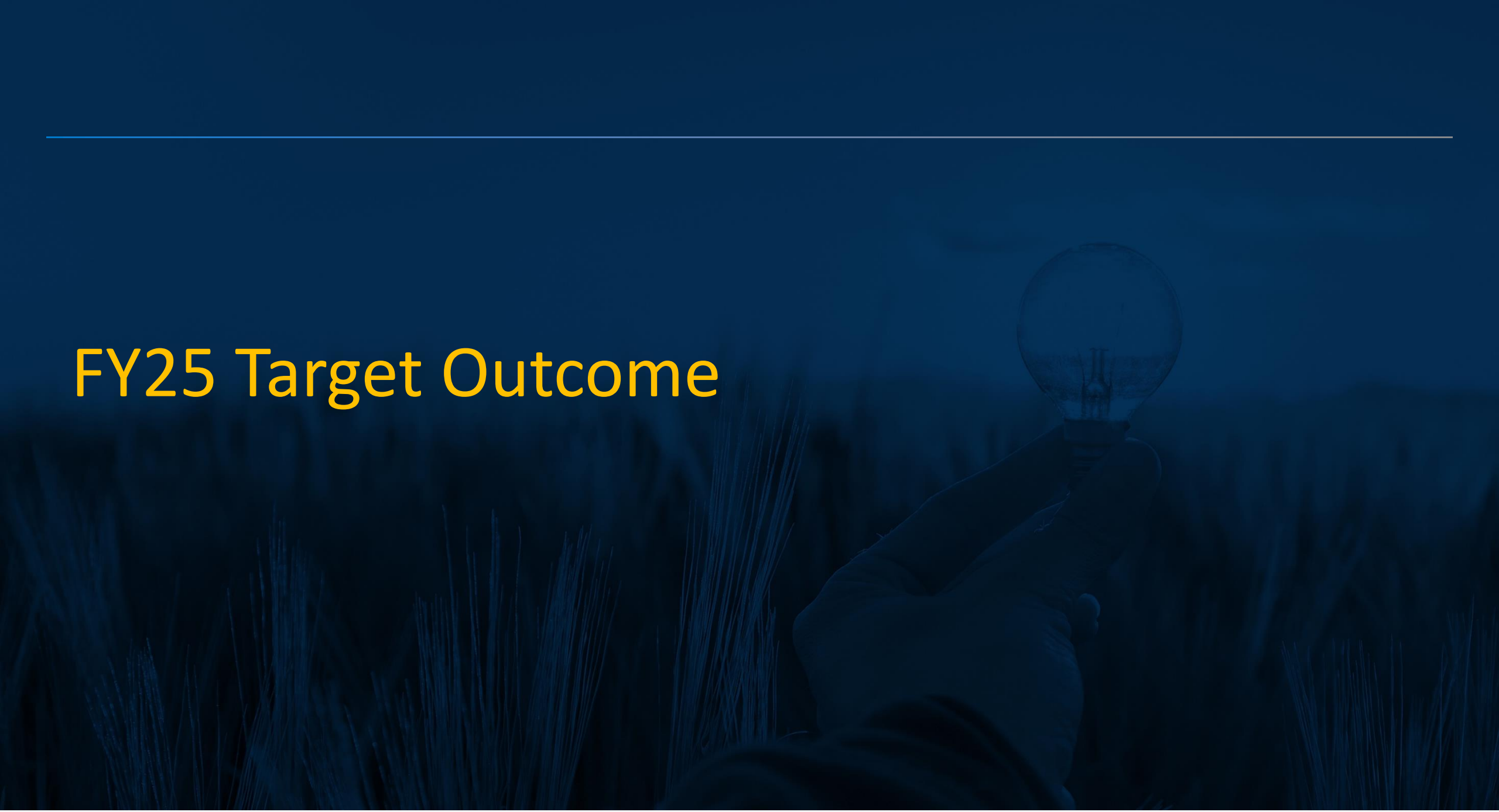


Expanding TAM[1] Through Innovation FY20 (AS)



1. Estimated by AspenTech from internal white space methodology on existing customer base

FY25 Target Outcome



Best-in-Class Profitability and Double-Digit Growth

Target Operating Model

Stated as percentage of Annual Spend

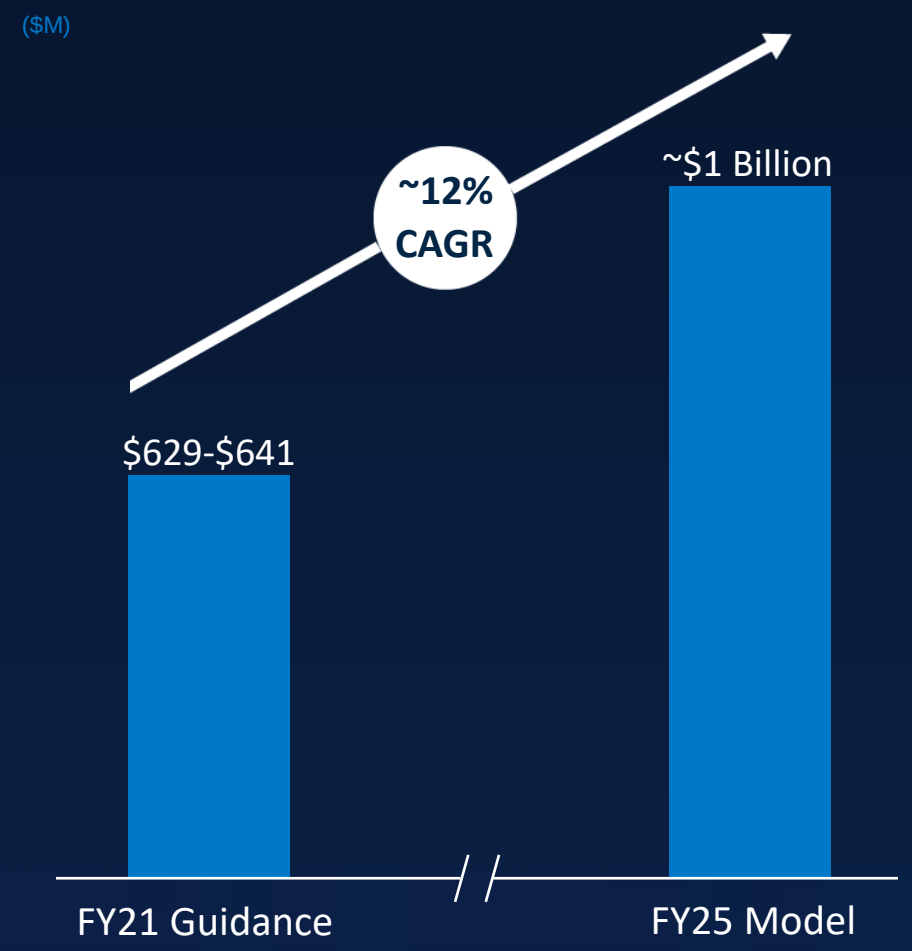
	Target Values*
Ending Annual Spend	100%
Cost of Revenue	10–13%
Sales & Marketing	20–22%
Research & Development	14–16%
General & Administrative	8–9%
GAAP Operating Expenses	43–46%
GAAP Operating Margin	42–45%
Non-GAAP Operating Margin	47–50%

GAAP

Non-GAAP

*Totals may not equal 100% due to rounding

Target Annual Spend



In Summary

AspenTech Investment Highlights

- **Value Creation for Customers**
- **Mission-Critical Products and Solutions**
- **World-Class Customer Base**
- **Market Leadership Position**
- **Multi-Billion Dollar Opportunity**
- **Long-Term Contracts and Recurring Revenue Model**
- **Best-in-Class Profitability and FCF**
- **Uniquely Positioned to Deliver on Industrial AI**
- **Well Understood Growth Opportunities**

Our Mission

Accelerate the digital transformation of
the industries we serve by optimizing their assets
to run safer, greener, longer and faster


aspentech
Thank You.

Industrial AI Strategy and Solutions

David Arbeitel, Senior Vice President, Product Management

February 12, 2021

Aspen Technology Disclaimer

Aspen Technology may provide information regarding possible future product developments including new products, product features, product interfaces, integration, design, architecture, etc. that may be represented as “product roadmaps or product visions”.

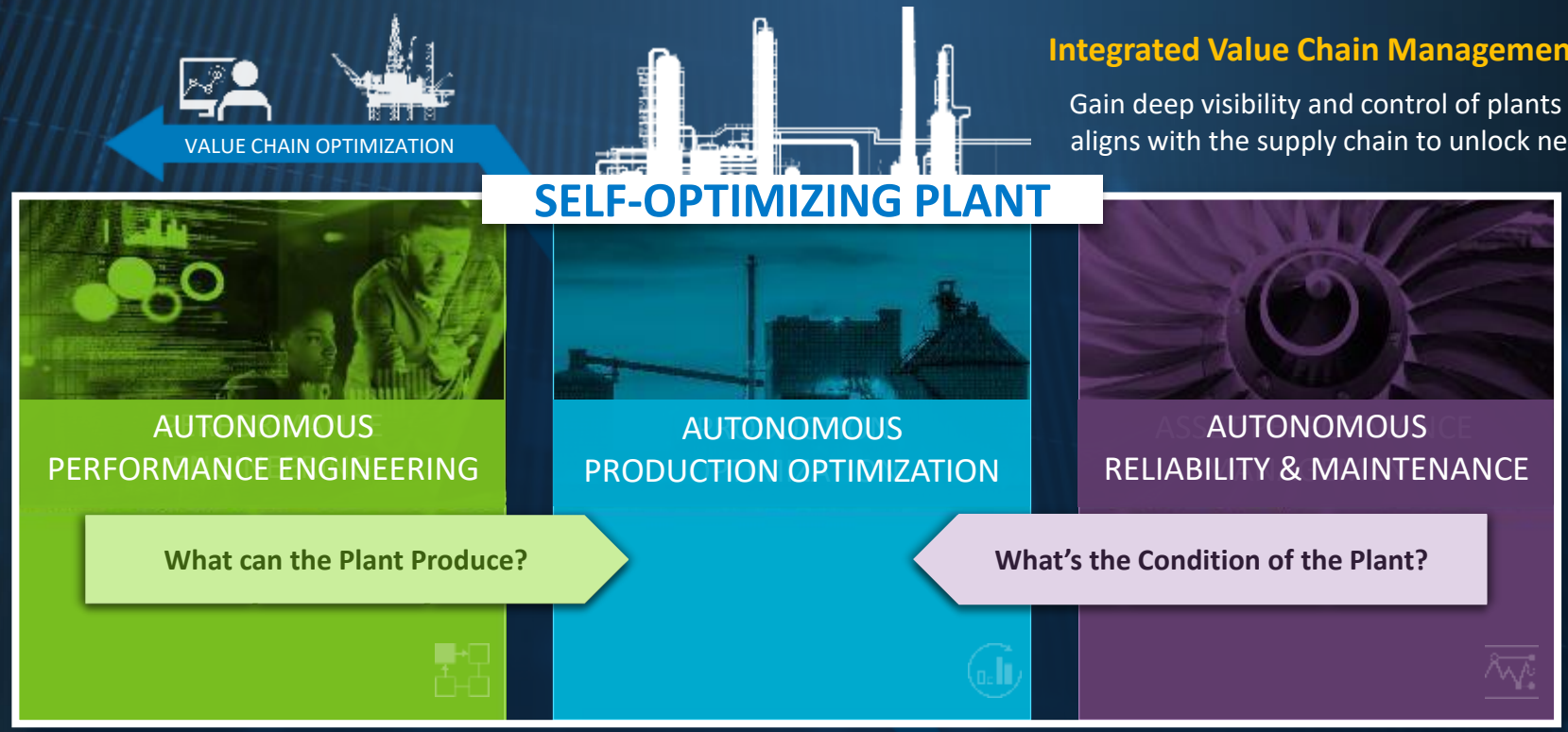
Any such information is for discussion purposes only and does not constitute a commitment by Aspen Technology to do or deliver anything in these product roadmaps or otherwise.

Any such commitment must be explicitly set forth in a written contract between the customer and Aspen Technology, executed by an authorized officer of each company.

Industrial AI

Asset Optimization Strategy for Next Level Value Creation

Self-Optimizing Plant Vision Powered by Industrial AI



Integrated Value Chain Management

Gain deep visibility and control of plants and sites that tightly aligns with the supply chain to unlock new business opportunities

Technical Services

Significantly automate troubleshooting and debottlenecking through on-line digital twins that continuously mirror assets and processes

Maintenance Services

Achieve foresight into asset and process reliability and optimize maintenance scheduling in order to maximize profitability and sustainability potential

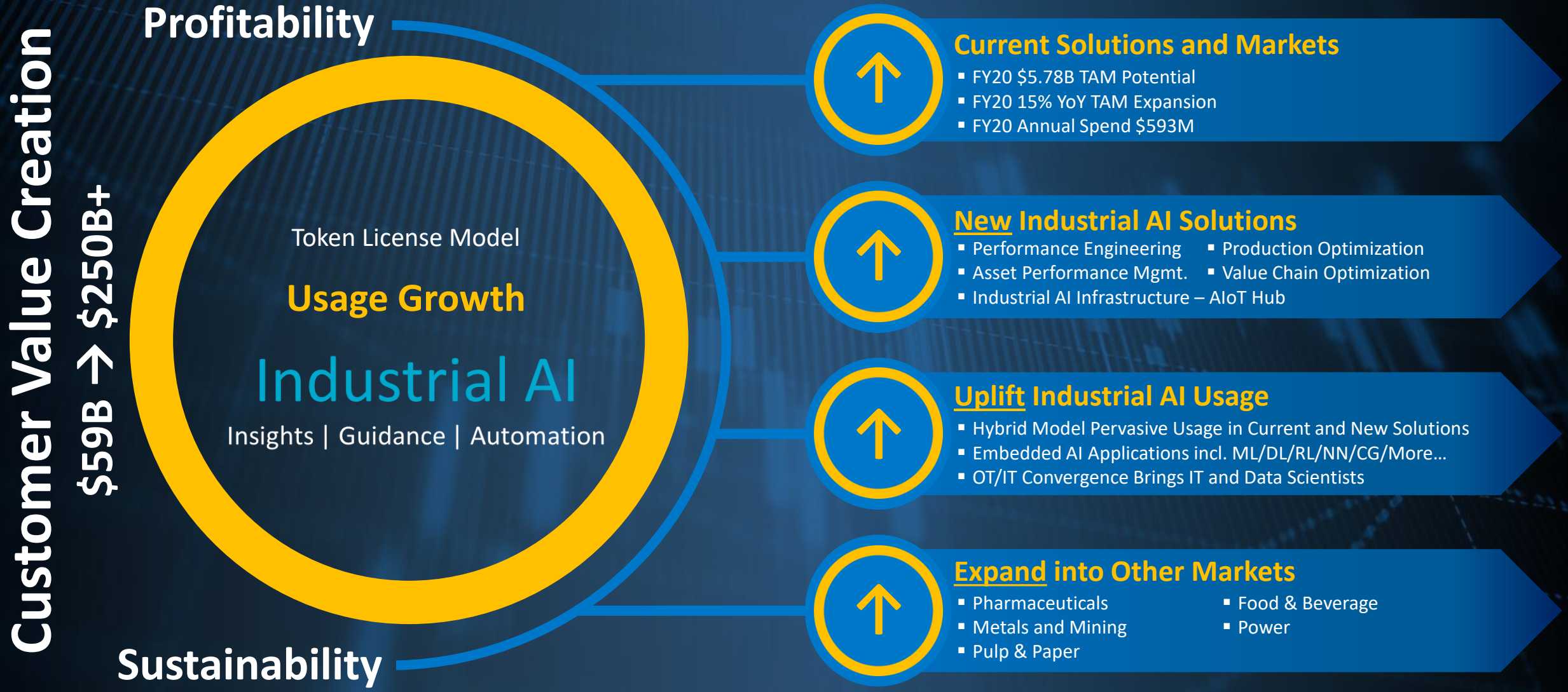
Operations Services

Significantly automate and "close the loop" on many aspects of operations to maximize profitability and sustainability potential

Industrial AI

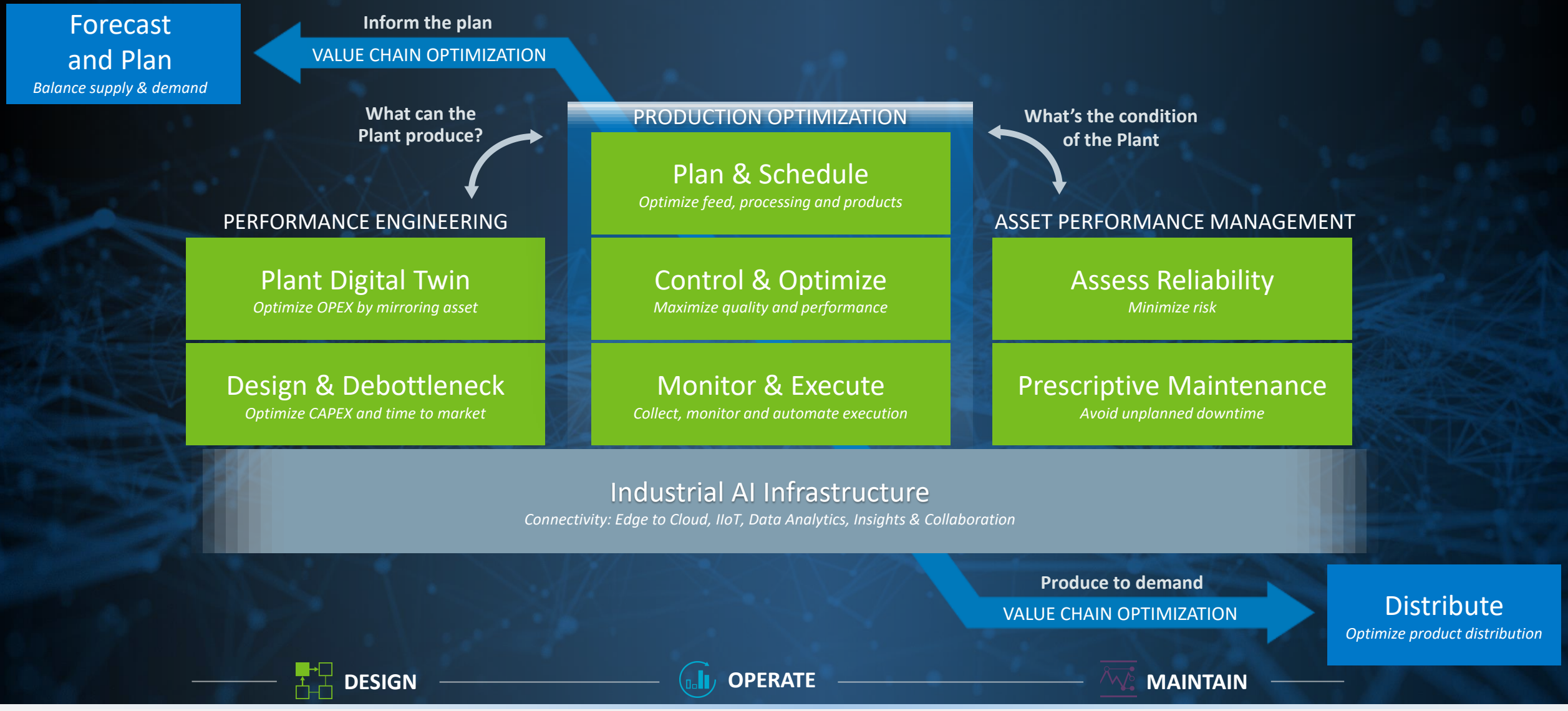
Insights | Guidance | Automation

Industrial AI Strategy Growth Drivers



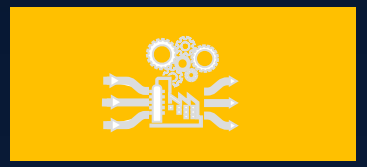
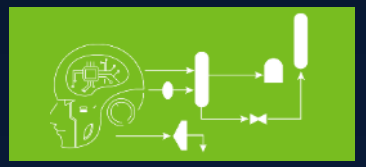
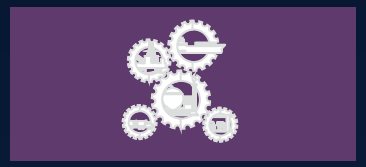
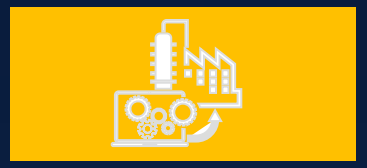
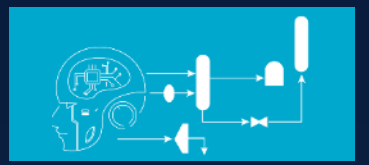
Asset Optimization — Digital Reference Architecture

aspenONE® Industrial AI Solutions and Infrastructure



aspenONE® V12 Innovation Highlights

Industrial AI Infrastructure and Solutions Introduced Fall 2020

AIoT Hub	Performance Engineering	Production/Value Chain Optimization	Asset Performance Management
 Aspen MES Collaborative™	 Hybrid Modeling	 Aspen Unified™	 Aspen Mtell®
 Aspen Cloud Connect™	 Multi-Case Analysis	 Aspen GDOT™	 Aspen ProMV™
 Industrial AI Workbench	 Cost Estimation Insights	 Hybrid Models	 Aspen Event Analytics™
 Aspen Enterprise Insights™	 Digital Twin Workflow	 Polymer Scheduling	 APM Insights

AspenTech Unique Capabilities

Enable the Self-Optimizing Plant of the Future

C3.ai

Amazon Machine Learning

UPTAKE

Azure Machine Learning Studio

sparkcognition

Democratize access to AI/ML frameworks, toolkits

Statistics

Machine Learning

Deep Learning

Neural Networks

Reinforcement Learning

Optimization

Platform & AI

Cloud

Simulation

Modeling

Edge Computing

High Performance Computing

Distributed Computing

Enterprise Visualization & Workflow

Data Analytics

Reliability

Software @ Scale

aspentech

Domain Expertise

First Principles

Decades of Experience

Plant Safety Understanding

Deep Industry Know-how

Operational Process Knowledge

Design Best Practices

AWS

Azure

databricks

Digital infrastructure providers

Traditional software vendors shifting to digital technology

AVEVA

Honeywell

GE Digital

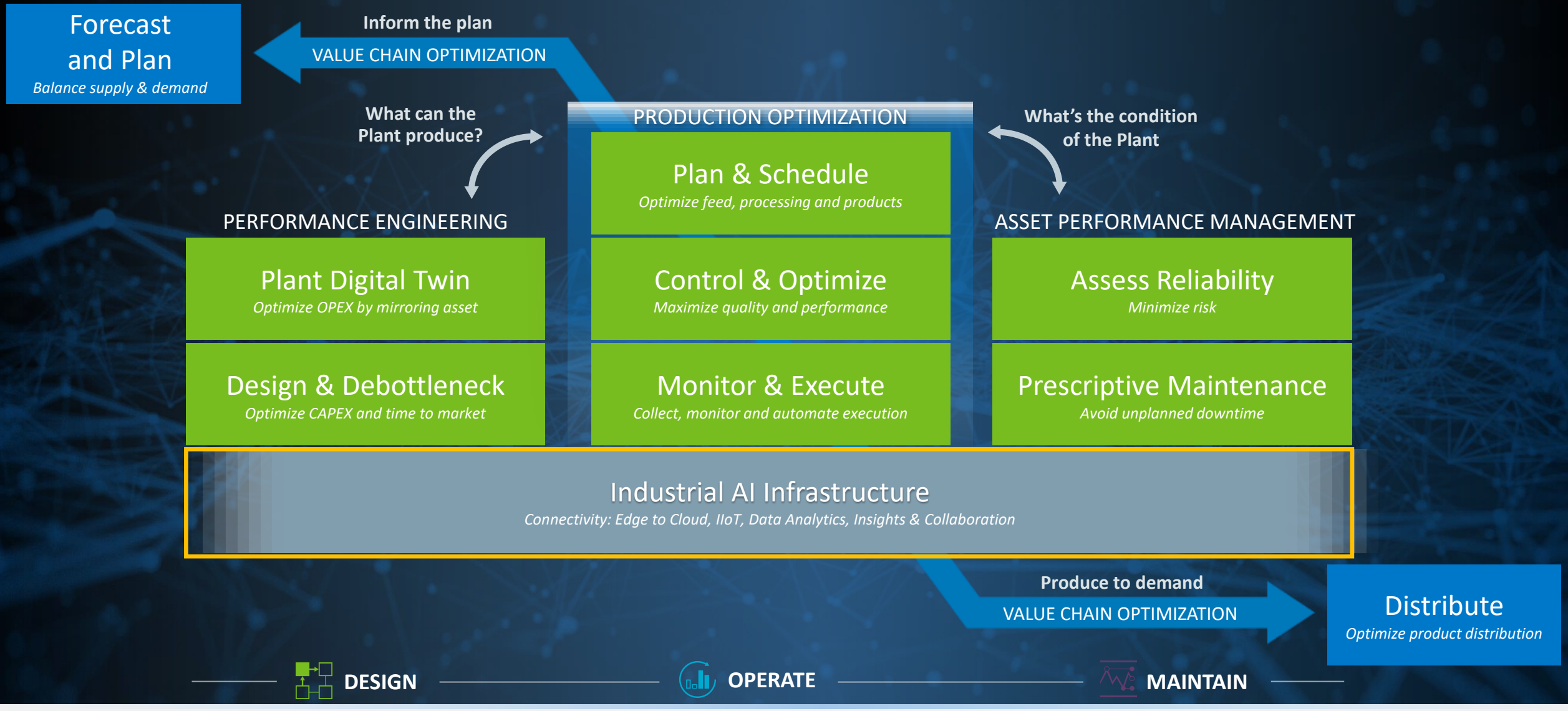
Baker Hughes

Industrial AI

Industrial AI combines Data Science & AI with Software and Domain Knowledge to deliver the Self-Optimizing Plant of the future for the Capital-Intensive Industries

Asset Optimization — Digital Reference Architecture

Industrial AI Solutions and Infrastructure



Industrial AI Infrastructure

AIoT Hub and Asset Optimization Solutions

Enterprise Visualization & Workflow

- **Aspen Enterprise Insights**
  - Enterprise Visualization and Collaborative Workflow

Industrial AI Apps

- **Aspen AI Model Builder™**
- **Aspen Event Analytics™**
- Aspen Industrial AI Models and Agents
- Customer and Partner Purpose-Built Apps
- 3rd Party / Custom

Enterprise Speed & Scale

- **Aspen Cloud***
  - **Model Productization** — Training, versioning, embedding, deploying, updating and sustainment…at scale
  - **Data Management** — Cleaning, conditioning, enrichment, processing and storage of…billions of data points
  - **Data Ingestion** — Large-scale ingestion and aggregation…across diverse data sources
- **Aspen Industrial AI Workbench**
  - **Aspen Data Science Studio**
  - **Aspen IoT Analytics Suite**
  - Machine Learning Libraries (scikit-learn, Keras, Spark, jupyter, TensorFlow, python, PROPHET)

Connectivity & Edge Computing

- **Aspen Connect**
  - Connectivity Framework and Intelligent Edge

Enterprise Data Sources

- **Aspen Data**
- Aspen Apps
- Historians
- HEXAGON PPM
- IIoT
- ERPs (SAP)
- EAMs (IBM maximo)
- www

*Cloud platform to host and manage Industrial AI Applications (Not licensable)

Enterprise-Level Historian at Cloud Scale

Aspen MES Collaborative™ for Aspen InfoPlus.21®

Actionable Information that Scales Beyond Operational Historians

Benefits

- Ability to aggregate and manage data from all sites represents tangible gains in roll-ups and comparisons
- Comprehensive real-time information on productivity and efficiency across the enterprise
- Leverages the resourcing capabilities of cloud technology

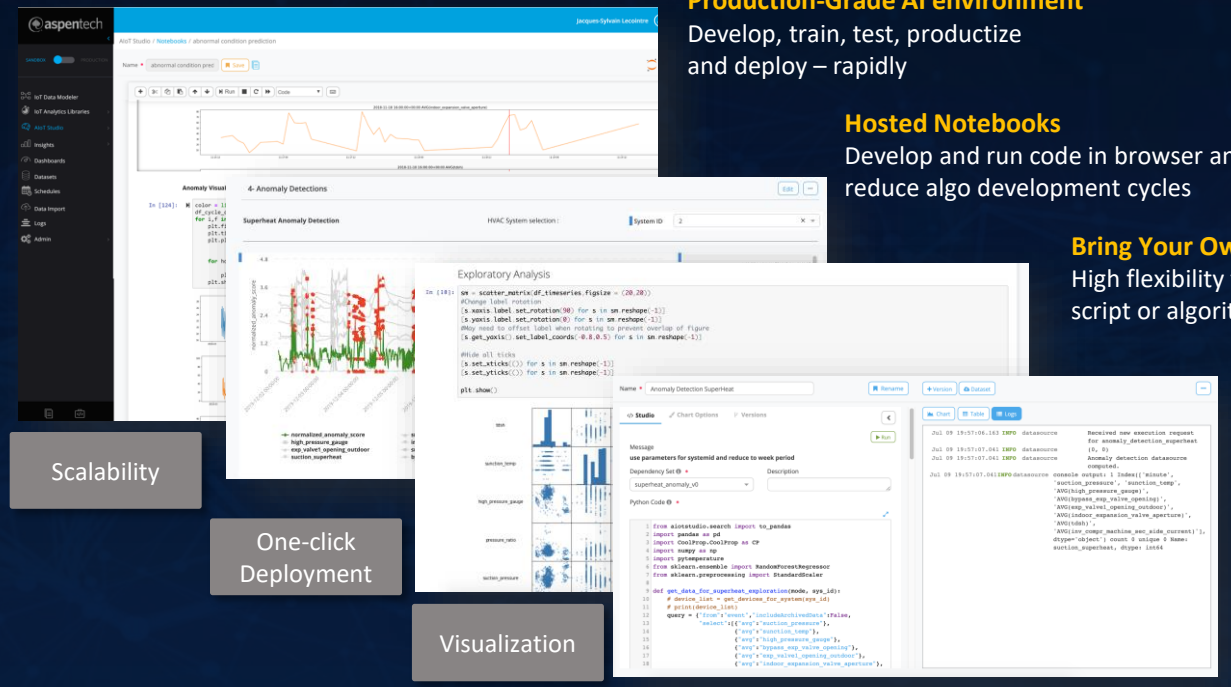
IIoT Analytics and AI Data Science Environment for Industrial AI

Aspen Industrial AI Workbench™

Empower Data Scientists to Build Data-Rich Industrial AI Applications

Benefits

- Cloud-ready AI/ML collaborative solution
- Enrich and process data streams across IIoT and enterprise data sources
- Organize and store enriched data, ready for analytics and machine learning
- Advanced data modeling, robust data pipelines, auto-scaling and best-in-class security



Production-Grade AI environment
Develop, train, test, productize and deploy – rapidly

Hosted Notebooks
Develop and run code in browser and reduce algo development cycles

Bring Your Own Model
High flexibility to use almost any script or algorithm code

Versioning & Collaboration
Enhancing data science team productivity and collaboration

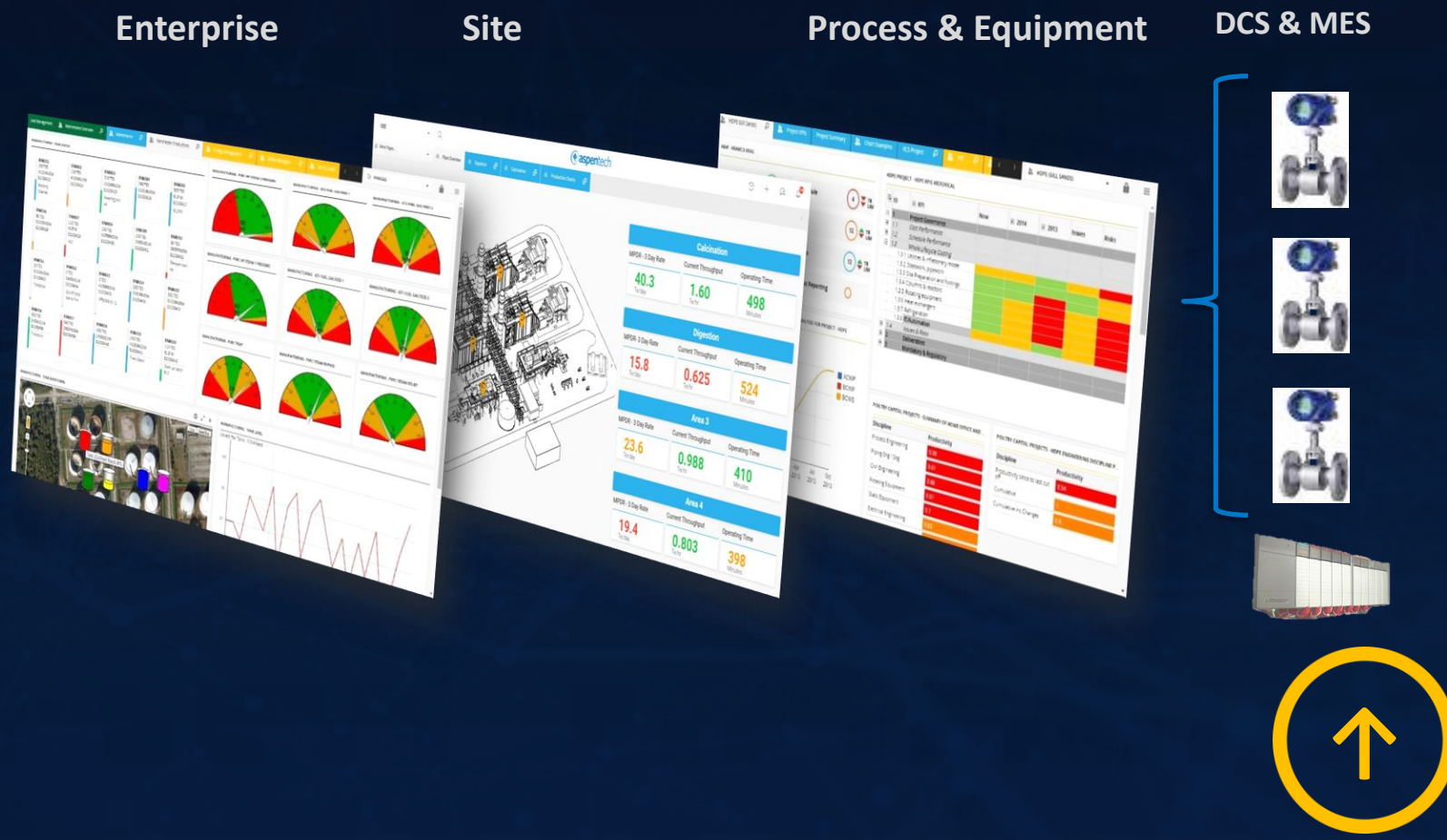
Enterprise Collaboration for Industrial AI Applications

Aspen Enterprise Insights™

Insights and Workflow Automation in Low Code/No-Code Environment

Benefits

- Improve enterprise performance management by integrating people, data and workflows into a highly automated digital business process
- Gain actionable insights through aggregation of data from different data sets across the enterprise into analytics and visualizations to guide better decisions
- Transform work processes into automated solutions ensuring work is assigned and processed effectively



Hybrid Models

Aspen Hybrid Models™ Power Industrial AI Applications

Pure Data-Driven AI Models Have Major Challenges for Capital-Intensive Industries

Challenges

- Modeling complex behavior
- Computationally expensive
- Difficult to maintain

Benefits

- Model difficult processes and constraints
- Create more accurate models faster
- Sustain more easily over time

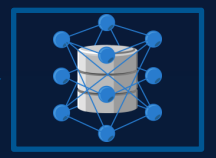
Democratize AI

ML Model

Pure Data-Driven

Plant

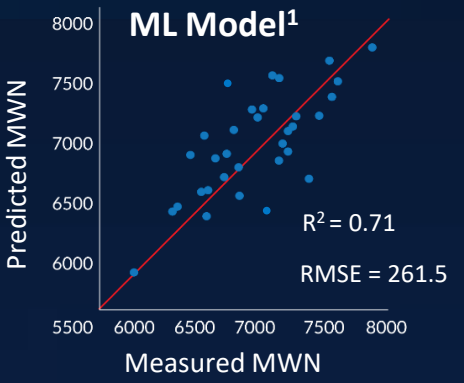
Operations data



ML builds empirical model

AI driven empirical model

Manual deployment

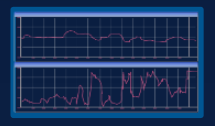


Aspen Hybrid Model

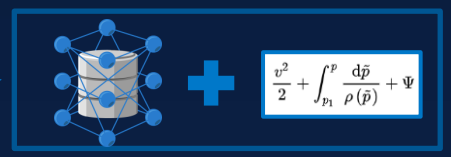
Data + 1st Principles Model

Plant

Simulation

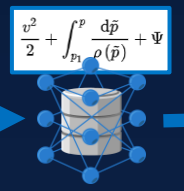


Operations & simulation data



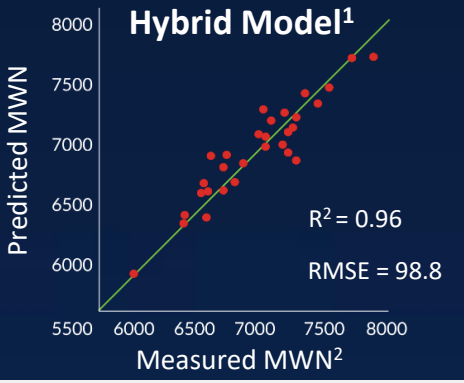
ML builds empirical model, guided by domain knowledge

Add 1st principles & constraints



AI driven Hybrid Model

Seamless deployment



Notes: 1.Polymer Reactor POC for Predicting Polymer Molecular Weight; 2. MWN = Molecular Weight Number

Record Innovation Club Participation and Customer Response

Aspen Hybrid Models™

100+ companies

300+ users

Hybrid Models

"Very exciting confluence of traditional first principles & AI based technologies."

"Easy to build and fast solution, great for real time model deployment."

"I liked the easy ability to import data and define constraints."

"Aspen Hybrid Models are a major advance in the field of chemical engineering. Hybrid Models are a major step forward in bringing together AspenTech's process models and machine learning; and are a game changer in process engineering and plant improvement."

Reliance Industries Limited

Dr. Karuna Potdar
Vice President Technology
Centre of Excellence
Reliance Industries Limited

"Aspen Hybrid Models provide very efficient non-linear planning model generation, taking information from Aspen HYSYS rigorous refining reactor models and offering a great deal of promise as a new approach for updating planning models"

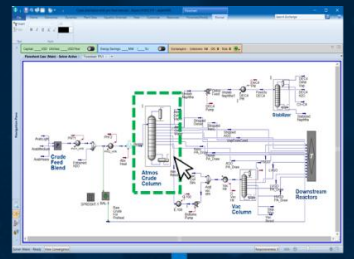
SARAS

Francesco Mura
Digital PM Pool Head
Saras

Wide Range of Industrial AI Use Cases for Asset Optimization

Aspen Hybrid Models™ Have Double Digit Approved and Pending Patents to Date

Operations Optimization



Simple, Robust and Fit for Purpose Models

Engineering Model

Online Digital Twin

Planning Model

Product/Operations KPIs

Color

Hydrate

Porosity

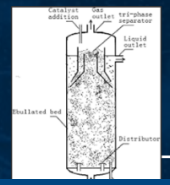
Soft/Virtual Sensors

pH

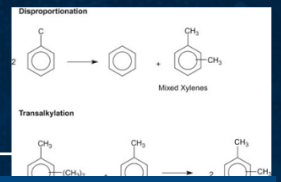
Particle Size

Viscosity

New Equipment Models

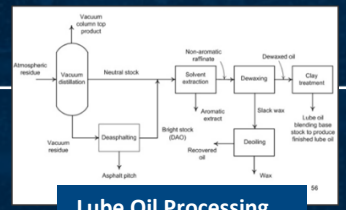


Specialized Equipment



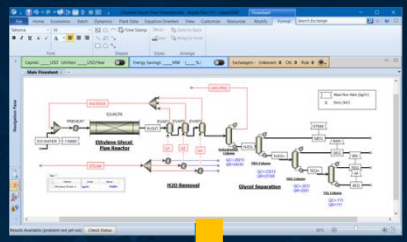
Aromatics Upgrading

Accurate models based on historical operational data

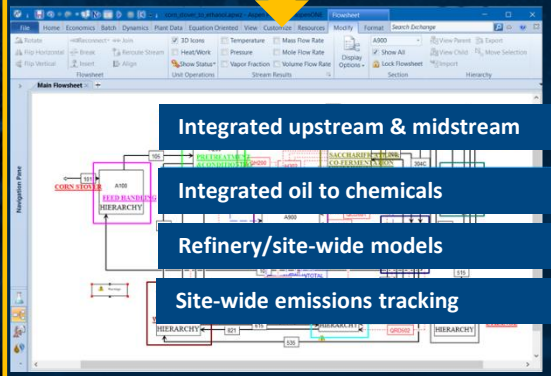


Lube Oil Processing

Asset-Wide Modeling & Optimization



Light-weight, Robust & Reliable Models for Muti-unit Simulations



Integrated upstream & midstream

Integrated oil to chemicals

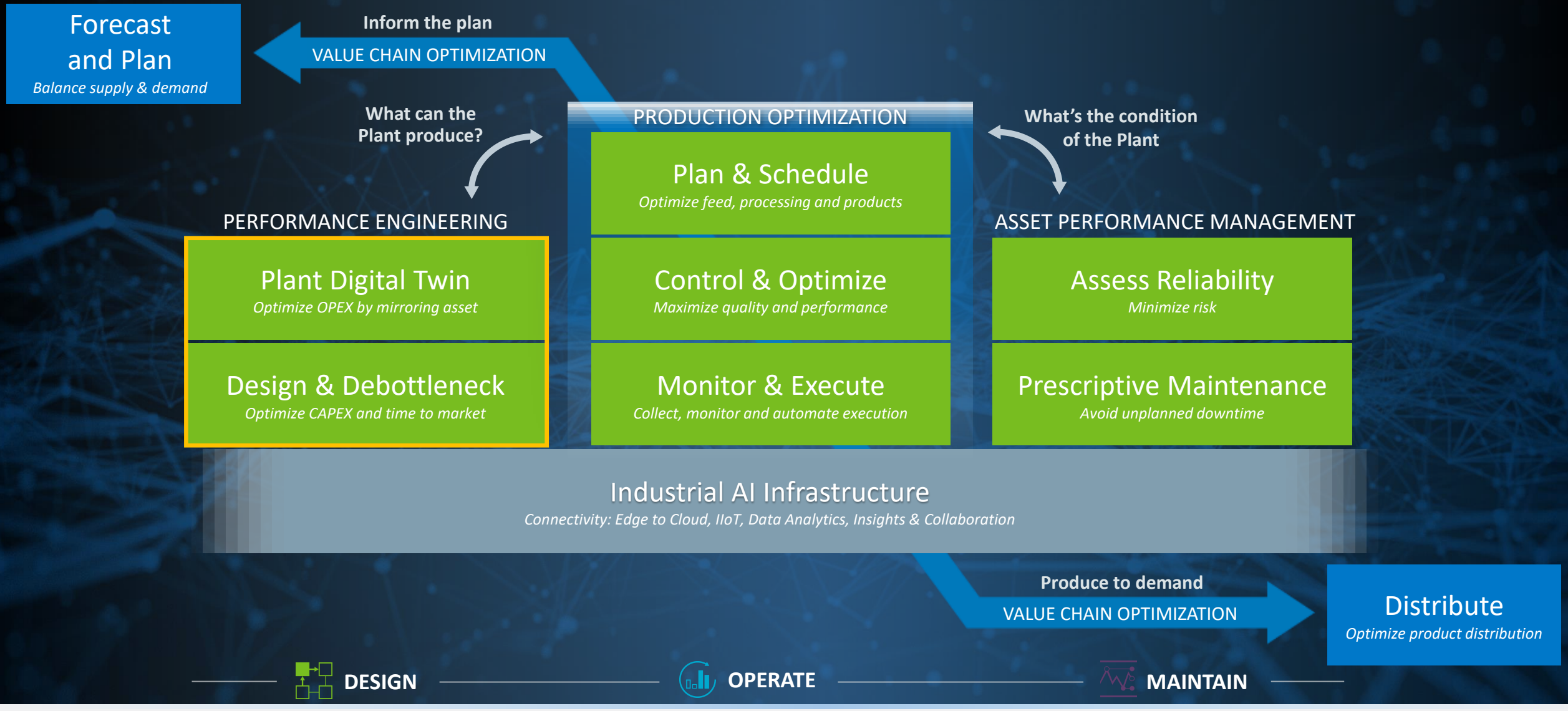
Refinery/site-wide models

Site-wide emissions tracking

Asset Optimization Solutions

Asset Optimization – Digital Reference Architecture

Performance Engineering



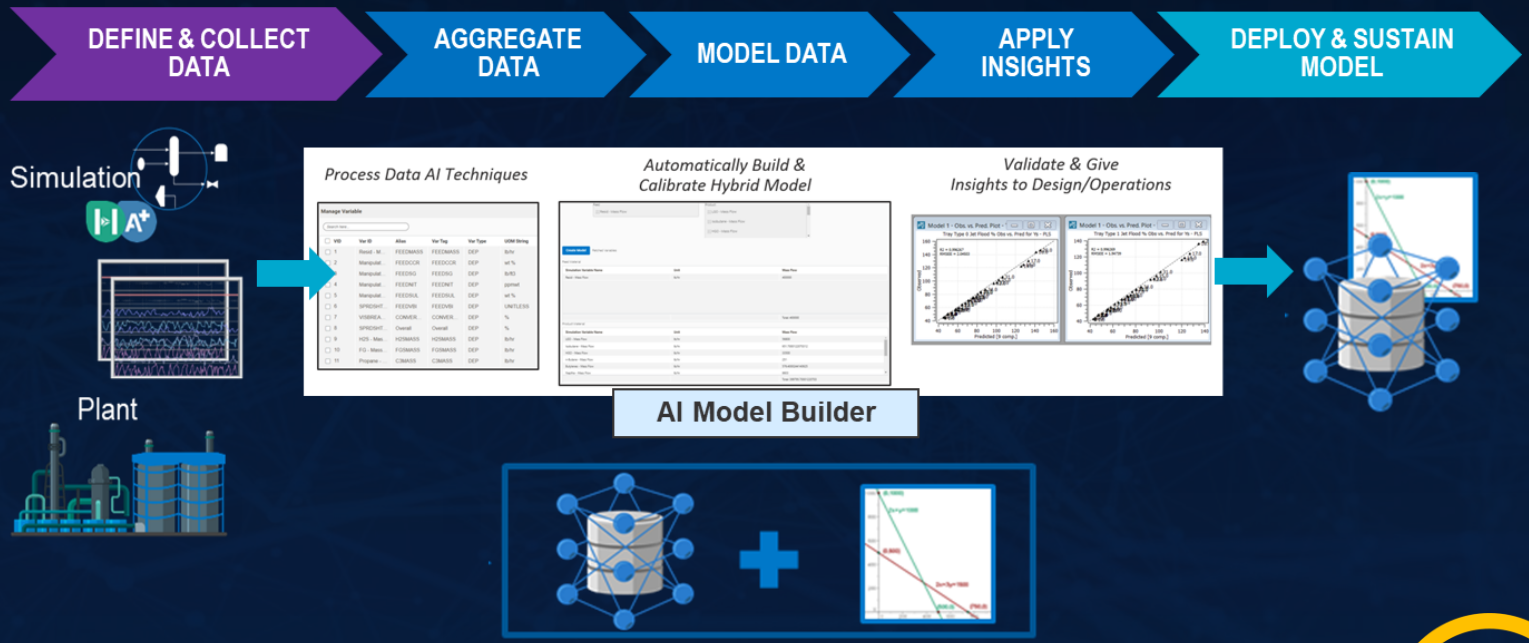
AI Model Builder for Aspen Hybrid Models™

Next-Generation Performance Engineering Solution for Aspen HYSYS® and Aspen Plus®

Transform Aspen HYSYS and Aspen Plus 1st Principles Models into Hybrid Models

Benefits

- Transform 1st Principles models into Hybrid Models in combination with plant data
- Makes it easier to deploy and sustain process models into operations
- Accelerates alignment between Performance Engineering and Production Optimization
- Expands the boundary of Performance Engineering to all types of equipment and plants



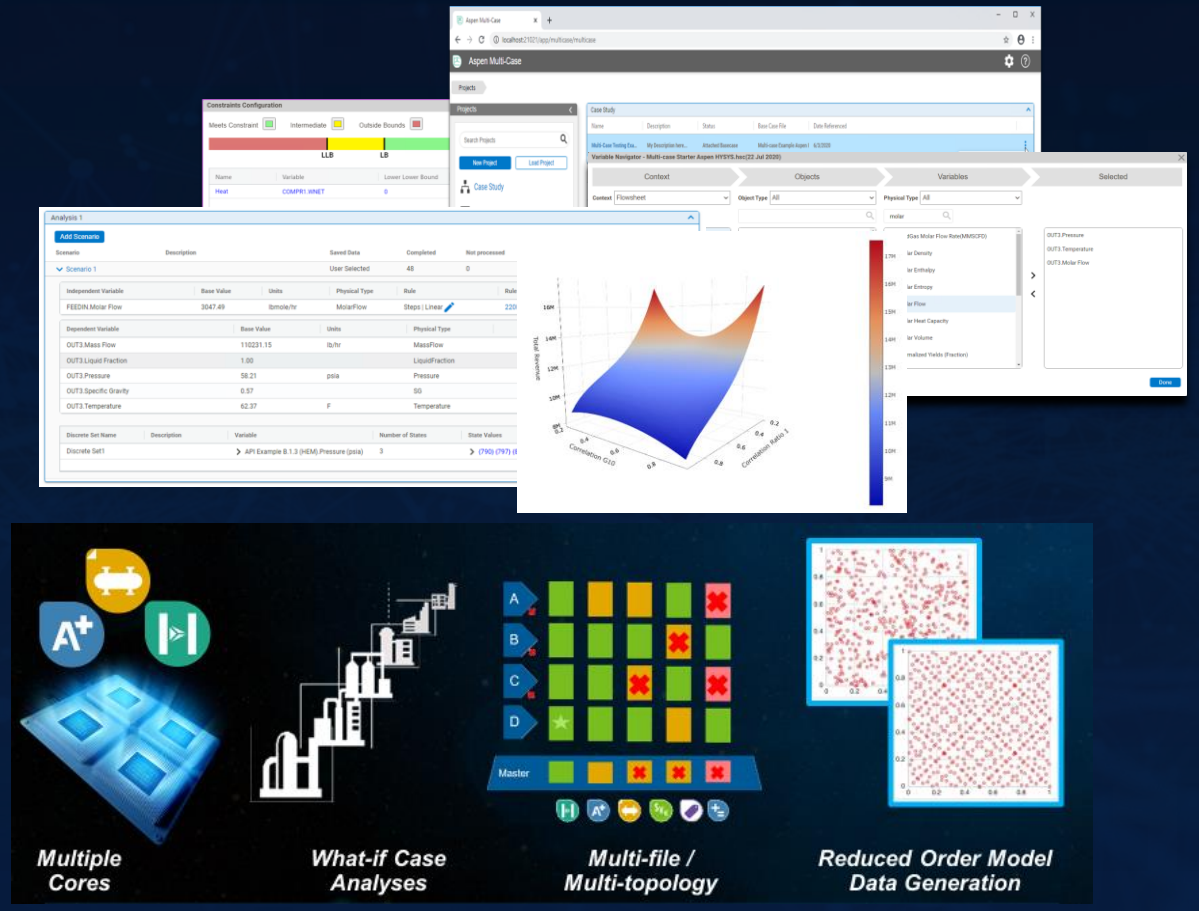
Accelerate Aspen Hybrid Models™ Simulations at Cloud Scale

Aspen Multi-Case™ for Aspen HYSYS® and Aspen Plus®

Simulate Multitude of Complex Process Scenarios with HPC Concurrently

Benefits

- Run a multitude of use cases in the same amount of time leveraging high performance computing (HPC)
- Employ advanced visualization to analyze multiple cases, validate design criteria, and find governing case
- Share Multi-Case project files containing entire set of simulations between EPCs and Owner/Operators



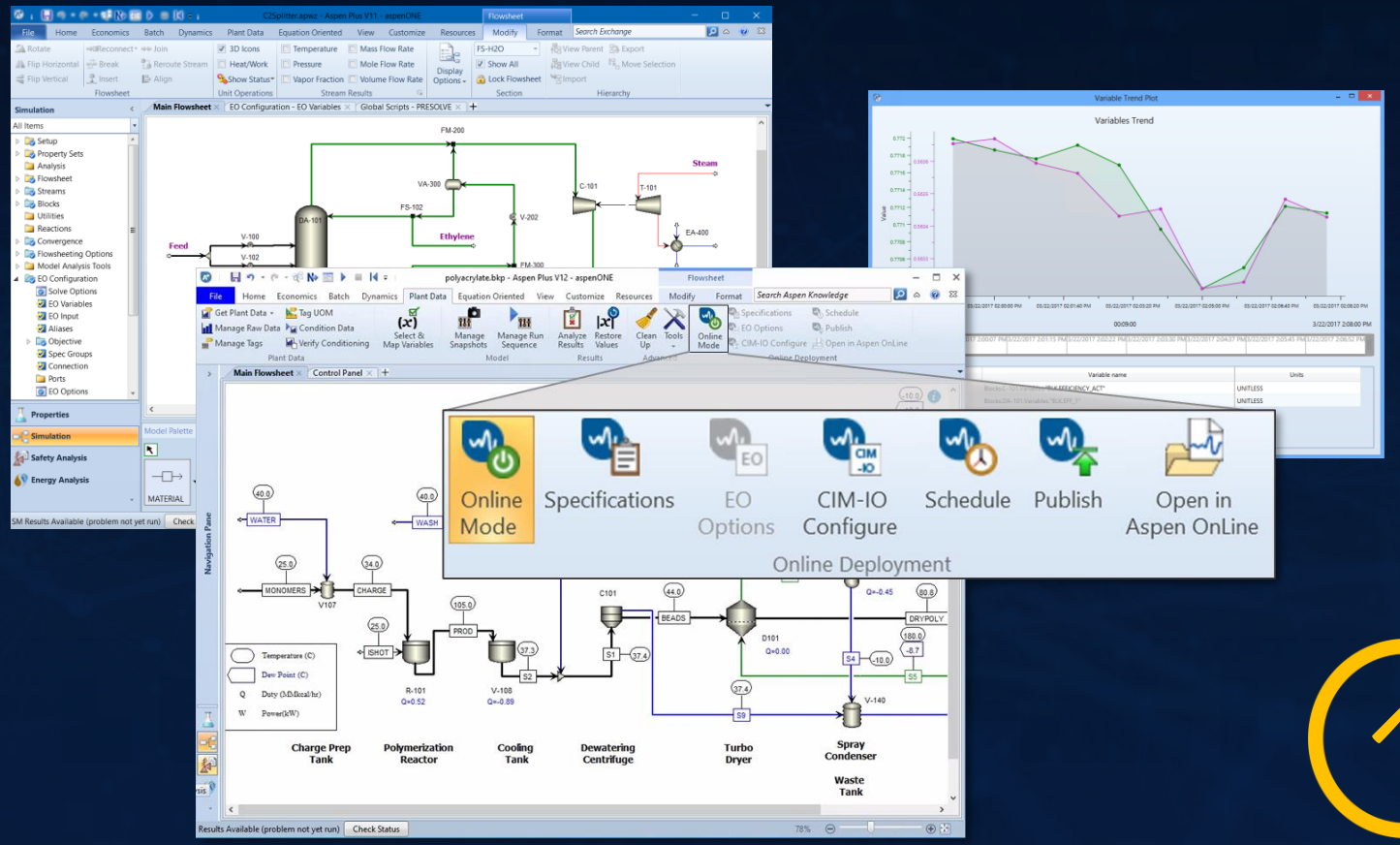
Real-Time Plant Digital Twins

Aspen OnLine® with Plant Data for Aspen HYSYS® and Aspen Plus®

Streamlined Deployment of Aspen Hybrid Models™ for Plant Digital Twins

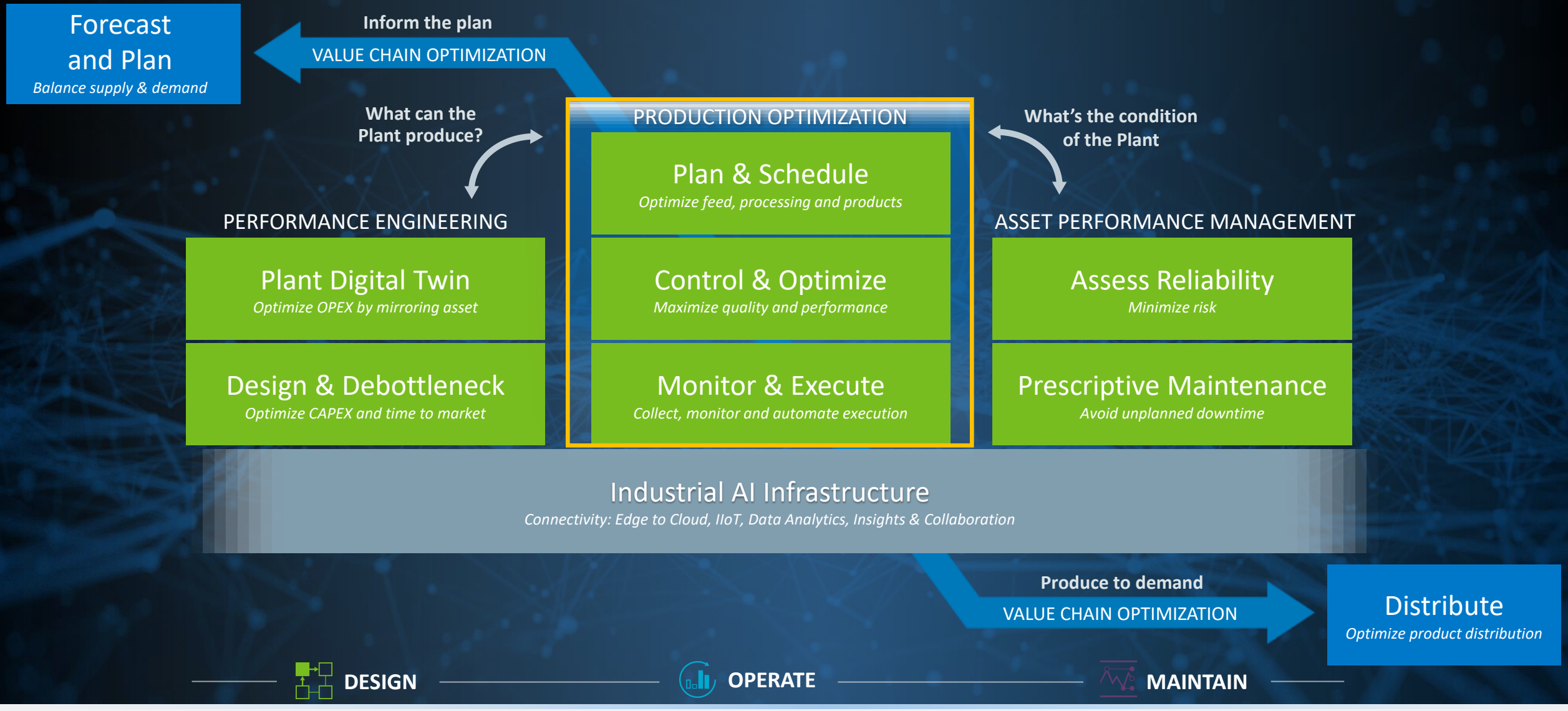
Benefits

- Complete workflow to configure and deploy on-line models using plant data in Aspen Plus and Aspen HYSYS
- Combine Sequential and EO models in the same on-line projects
- Deploy the same high-fidelity hybrid models for off-line and on-line use cases in Aspen Plus and Aspen HYSYS
- Easy model validation to keep simulation models up to date



Asset Optimization — Digital Reference Architecture

Production Optimization



Next-Generation Production Optimization

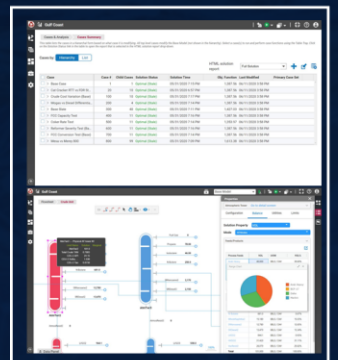
Aspen Unified™

Industrial AI Plant Automation that Maximizes Margins and Minimizes Emissions

Benefits

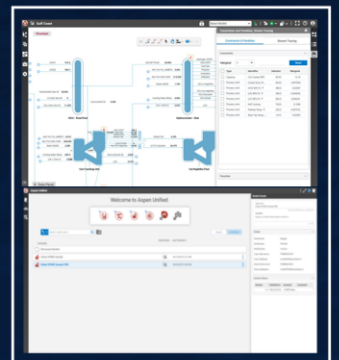
- Cloud ready Production Optimization that combines models and master data within a unified solution
- Unified flowsheets for planning, scheduling, dynamic optimization, and advanced process control
- Maximize margins while minimizing emissions using Industrial AI
- Leverages real-time data historians and constraints in GDOT/APC, and factors in current conditions in plants

Crude Selection



- Price catalog for sensitivity
- Improve parametric analysis

Production Planning & Optimization

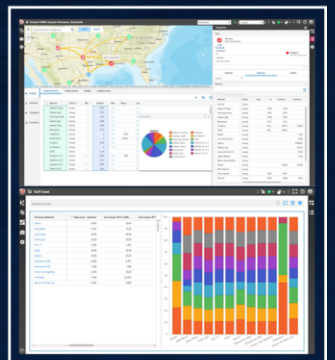


- Flowsheet model building
- Planning work area
- Model lifecycle management

Crude Scheduling

- Automatic reconciliation
- Crude schedule optimizer
- Cases for scheduling

Value Chain Optimization



- Integrated with individual refinery models
- Optimize shipping and storage
- Migrate easily from M/X-PIMS

Dynamic Optimization within the Aspen Unified™ Environment

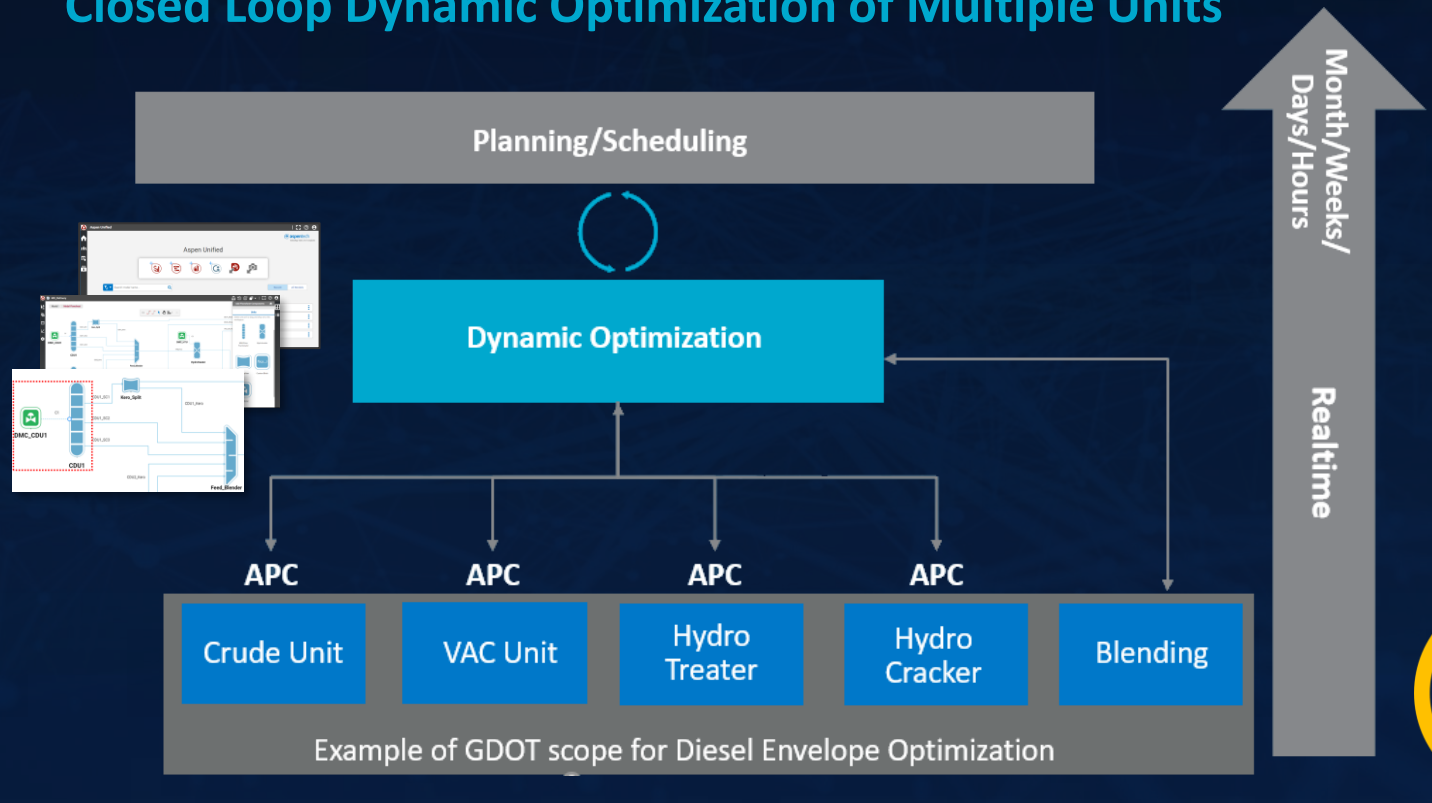
Aspen GDOT™

Intuitive Flowsheets for GDOT Model Building, Deployment and Maintenance

Benefits

- Reduce the gap between planning and operations by maintaining consistency with planning and APC models
- Run large scope of optimization in real-time at the same frequencies as APC
- Unified GDOT Builder flowsheet environment simplifies model building and configuration
- Continuously update models to reflect actual process conditions

Closed Loop Dynamic Optimization of Multiple Units



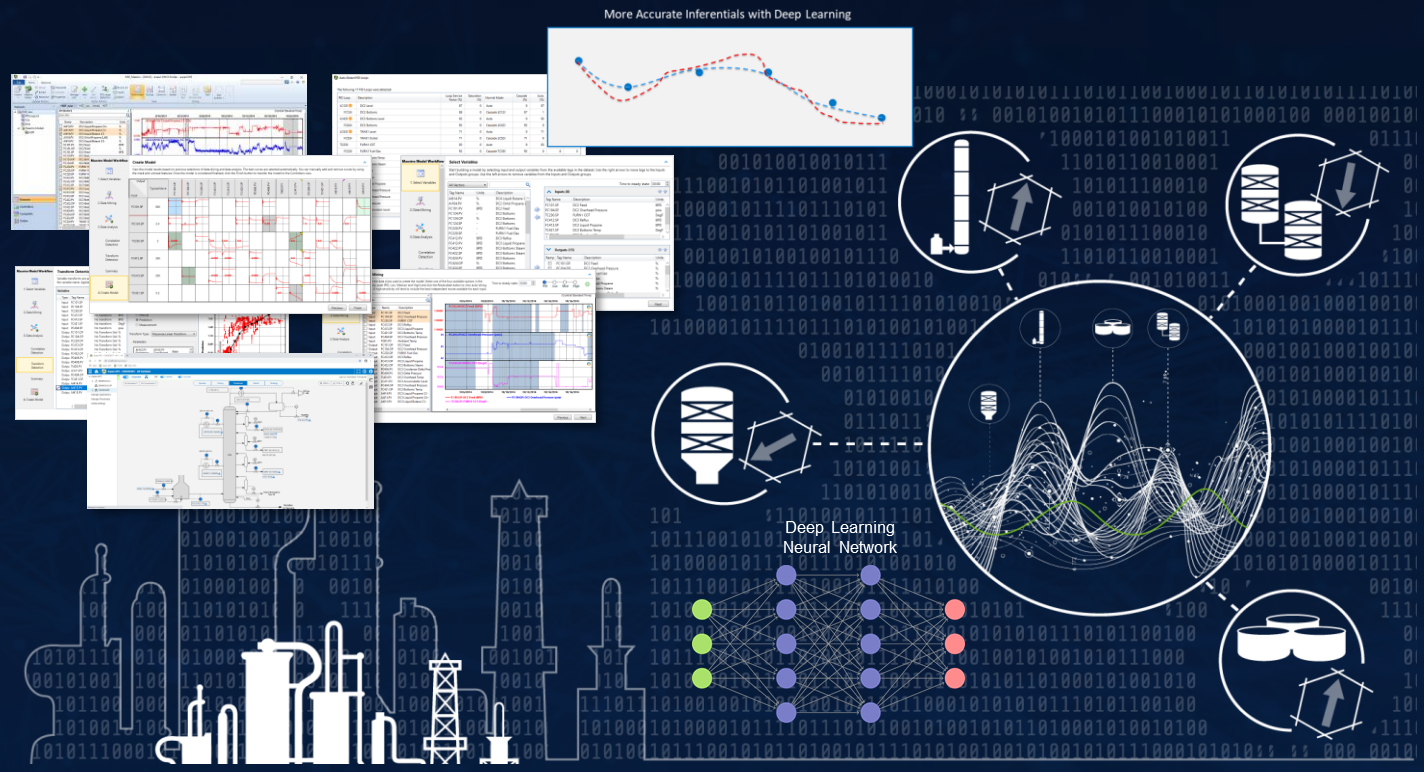
Automatically Adapt and Optimize to Ever-Changing Plant Conditions

Aspen DMC3™, Aspen Maestro™, and Aspen Deep Learning IQ™

Industrial AI for APC Model Building, Deployment and Adaptive Control

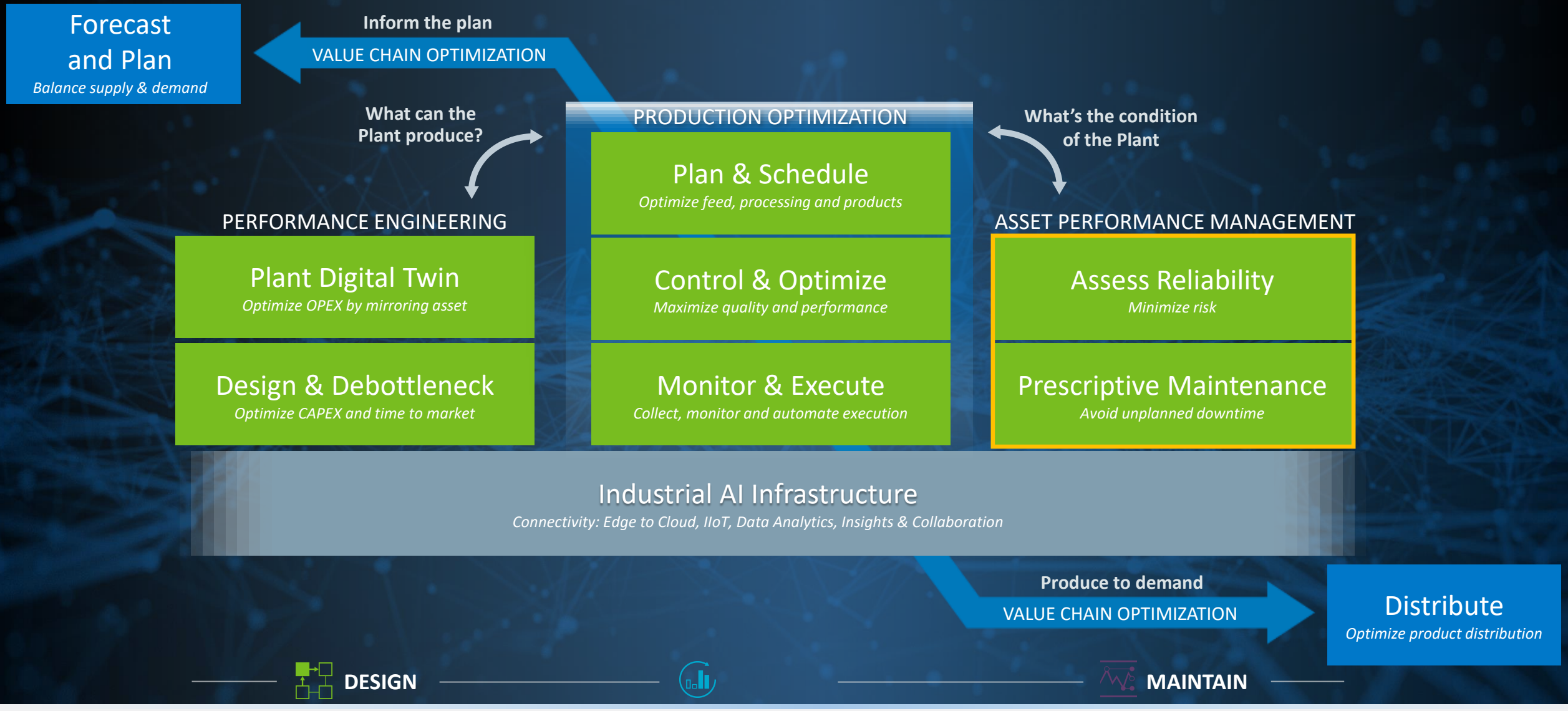
Benefits

- AI ML/DL mines historical process data using linear/non-linear variables in seed models with Aspen Deep Learning IQ and Inferentials
- Aspen Maestro infuses model-building expertise in simple self-guided workflows
- Adjust controller tuning and optimization while accounting for severe process non-linearities
- Remote deployment and performance monitoring with secure data access



Asset Optimization — Digital Reference Architecture

Asset Performance Management



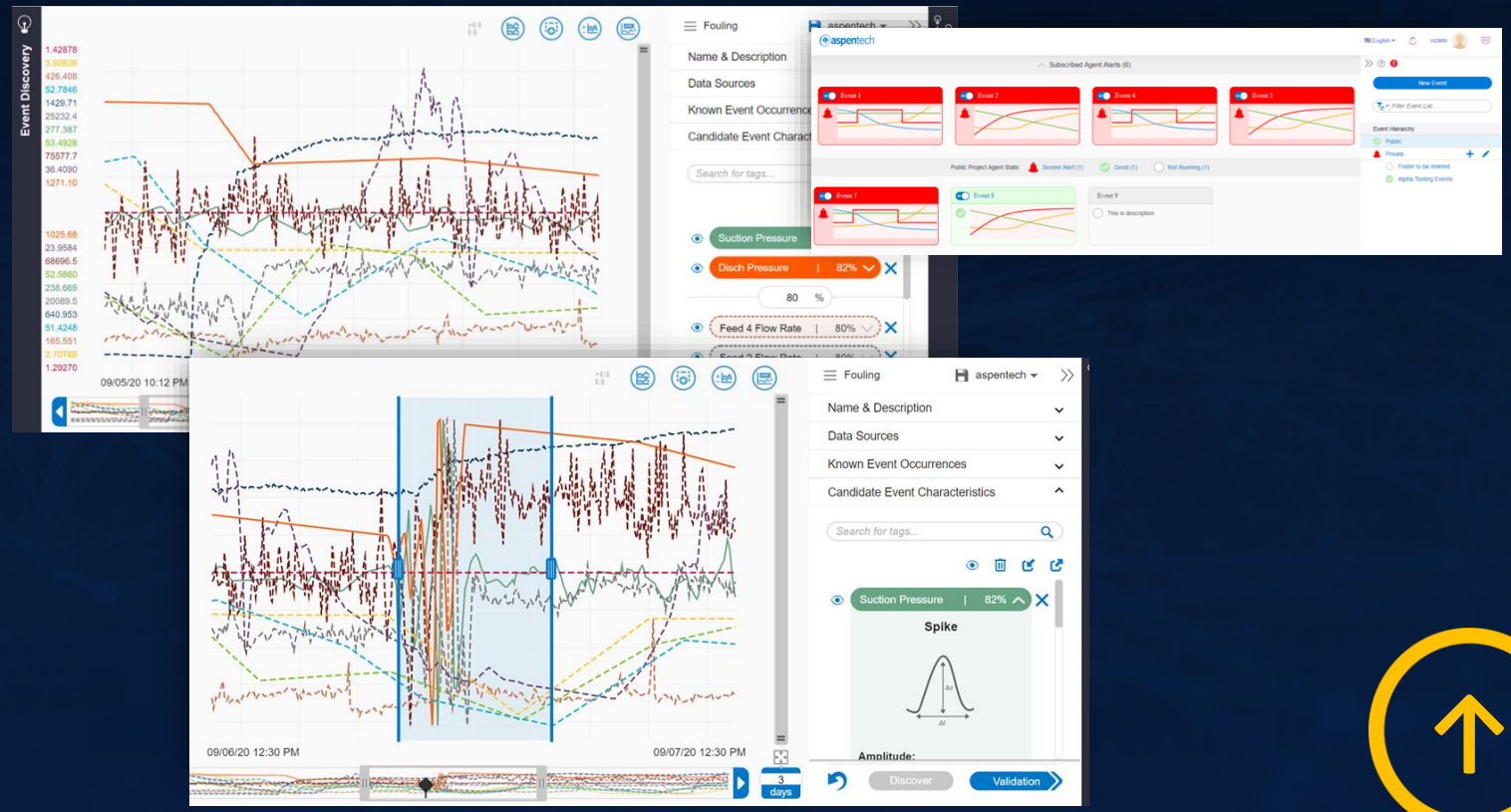
Identify Problematic Events that Lead to Unplanned Downtime

Aspen Event Analytics™

Automate Investigation and Diagnosis of Unexpected Production Events

Benefits

- Enable operators and plant engineers to rapidly diagnose unusual process behaviors and determine best response
- Automatically builds an event agent based on the diagnosis
- Monitor processes on-line to detect and rapidly resolve repeat events
- Manages a history of all event occurrences and resolutions
- SaaS application accessible anytime and anywhere



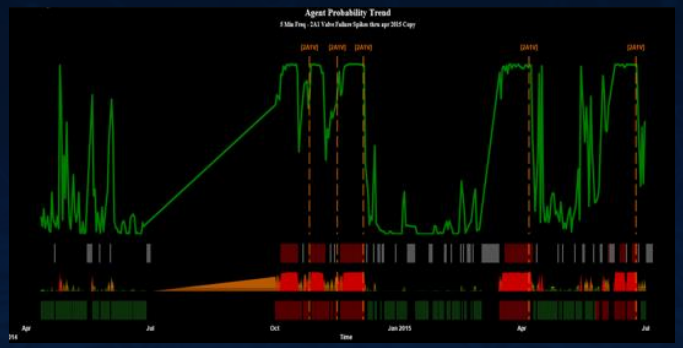
Avoid Unplanned Downtime and Prevent Environmental Incidents

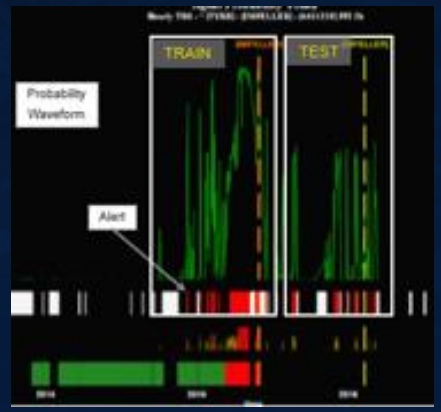
Aspen Mtell® with Maestro

Proactively Isolate Events that Lead to Unplanned Downtime and Asset Damage

Benefits

- Enable reliability engineers to rapidly build autonomous agents that protect assets throughout the plant
- Industrial AI based ML predictive and prescriptive maintenance
- Monitor assets context of usage to provide the earliest possible warning of asset damage and/or failure
- Maestro assists with selecting and preparing data for agent building and feature engineering





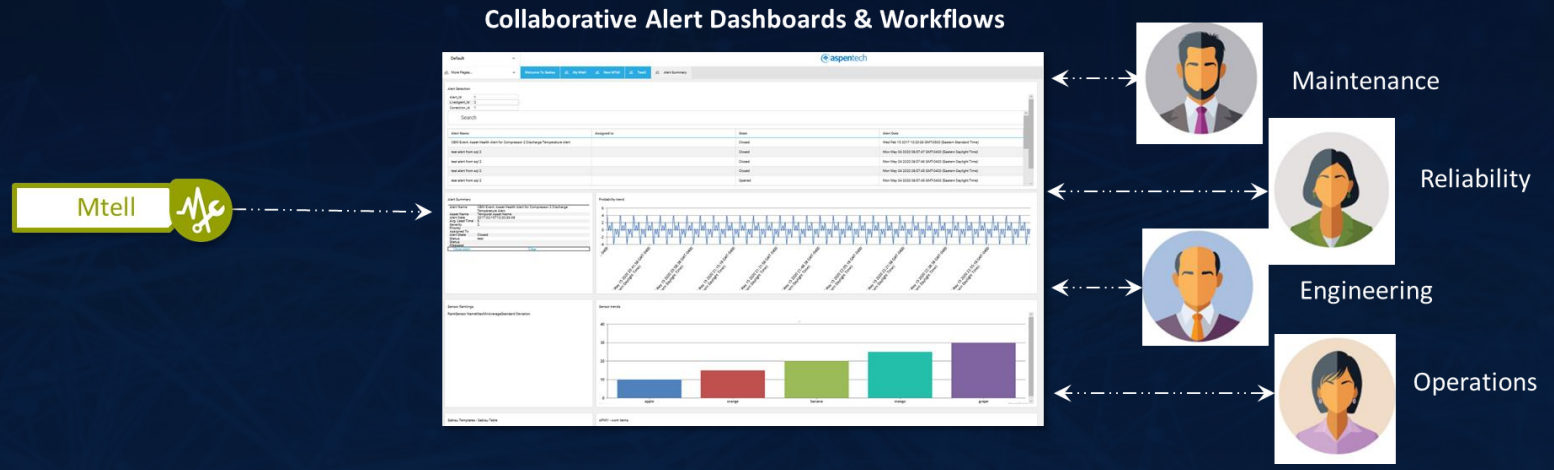
Make Better Maintenance Decisions and Initiate Preventative Actions

Aspen APM Insights™

Collaboration for Rapidly Assessing Alerts and Initiating Mitigation Workflows

Benefits

- Enable cross-functional teams to proactively assess real-time asset and process predictive alerts
- Collaborate for optimal resolution and initiate automated workflow responses
- Report on asset performance, alert histories, and value of mitigation responses



Key Takeaways

- Aspen Industrial AI Delivers the Next Level of Value Creation Across Capital-Intensive Industries
- Aspen Hybrid Models™ are a Major Advance in Chemical Engineering and Artificial Intelligence that “Changes What is Possible” for Digitalization
- Aspen Industrial AI V12 Solutions are the 1st Wave of the Self-Optimizing Plant Vision with Much More in the Future

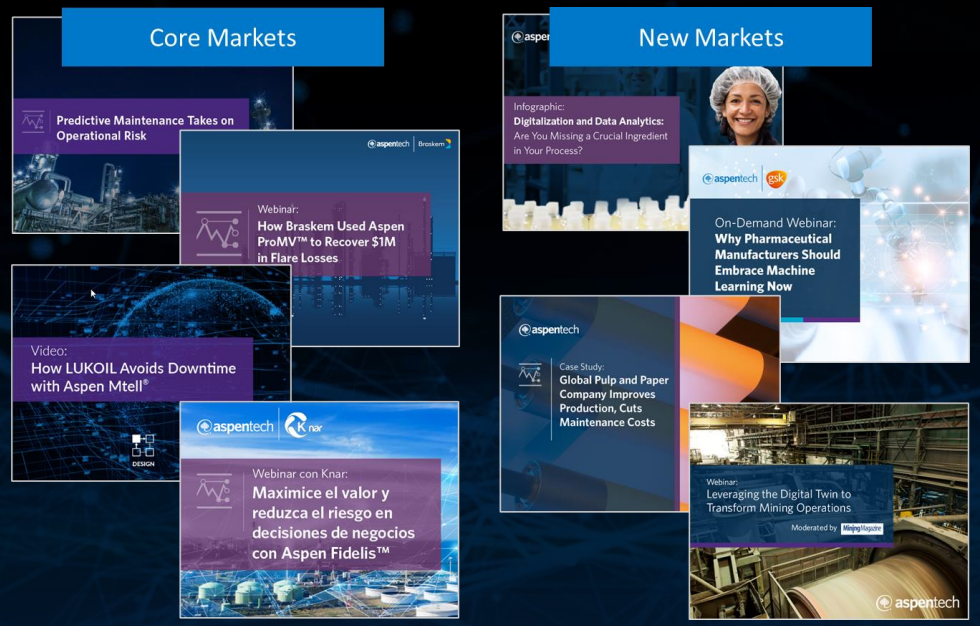

aspentech
Thank You.

Customer Value Creation

John Hague, Executive Vice President, Operations

February 12, 2021

Asset Performance Management (APM)



gsk · Braskem · MOL · Teck · Phillips 66 · Petrocuyo · covestro · wood. · LUKOIL · Knar · Pan American Energy

Asset Performance Management Customer Value

AI prescriptive maintenance analytics are successfully protecting pipeline integrity and refining assets. This enables the company to take preemptive actions to maximize asset availability and safety.

Large Refining Company

Avoided safety & environmental issues. $3.26M Savings to date!

Challenge

- Deployment of prescriptive maintenance across the enterprise
- Goal is to reduce unplanned downtime and emissions, while improving safety

Solution

- Prescriptive maintenance AI agents deployed on extended midstream pipeline – 12 Refineries, 6 Pipeline Regions, 361 Major Assets Protected
- Deployment best practice across APM included customer enablement & customer success
- On-time and under budget

Product:
Aspen Mtell

Significant save – Failure Agent on a lube oil pump – avoided seven days of downtime, due to the avoidance of a primary crusher bearing failure!

Metals & Mining Company

33 Catches! 1 Avoided 7 Days of Downtime

Challenge

- On-going breakdowns prevent meeting operational and financial goals
- No lead-time to easily mitigate risk or recover quickly from unplanned downtime
- Safety risks due to unplanned shut-downs and start-ups

Solution

- Aspen Mtell deployed at selected sites across four asset classes: Primary Crushers, Primary Scrubbers, Circulating Media Pumps and Common Stream Conveyors
- Customer moving to deploy across the enterprise with additional sites in South Africa, Botswana, Canada, Chile and Australia!

Product(s):
Aspen Mtell

Mtell provides advanced warning of column flooding, increasing on-spec product and eliminating more than 50 flooding events per year!

Global Oil & Gas Company

3 Days of Increased Asset Availability

Challenge

- Generation of off-spec materials that need to be reprocessed due to asset instability
- Temporary unit shutdowns
- Collected lots of information on preferred data platform, unable to fully capitalize on investment

Solution

- Aspen Mtell enables prescriptive maintenance
- Identification of root cause resulting in asset instability
- Continuous learning of event patterns with Aspen Maestro for Mtell
- Applied Aspen domain expertise to data platform for reliability insights

Products:

Aspen Mtell, Aspen Maestro for Aspen Mtell

30 Catches in 30 Days

External Outreach

- 5-Week **Email** Campaign

Social Media

Results

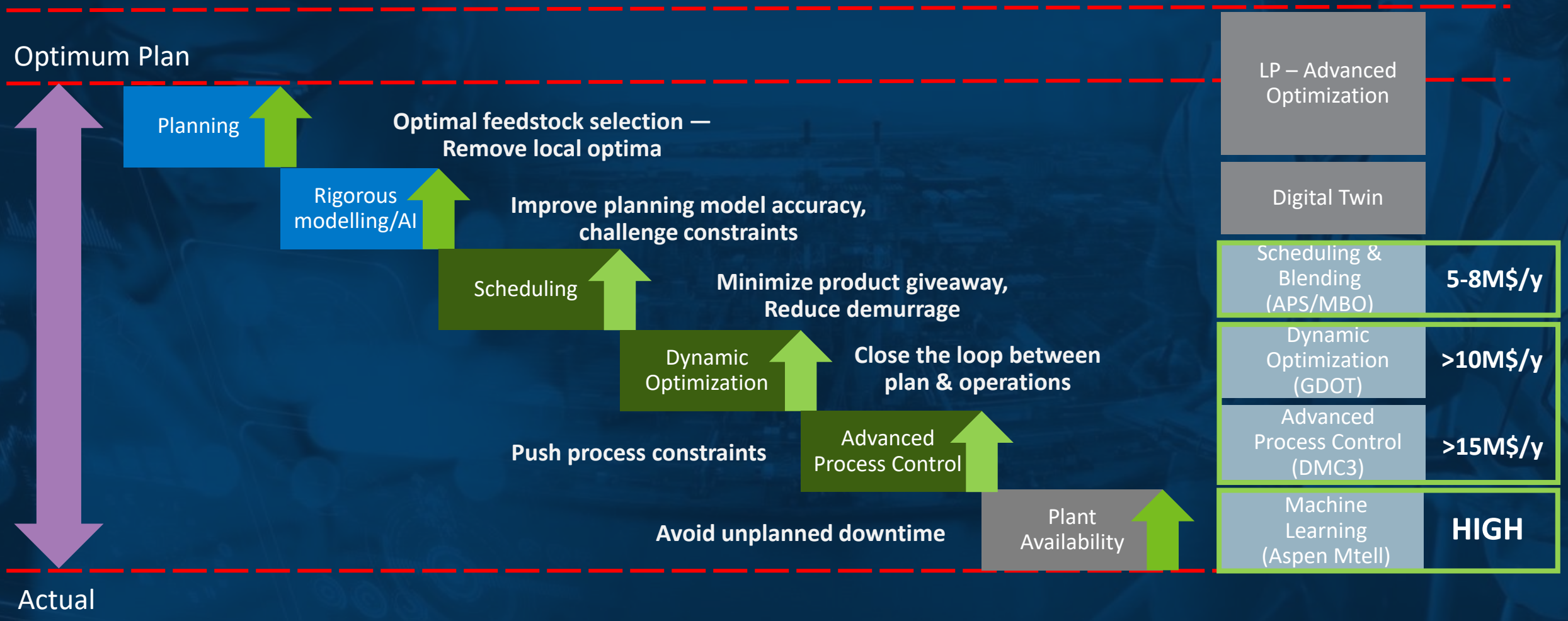
- **Thousands** of Visitors
- Longer Time on the site
- Increase Customer Engagement

Turning Unplanned Downtime Into Planned Downtime

30 Catches in 30 Days Interactive Infographic

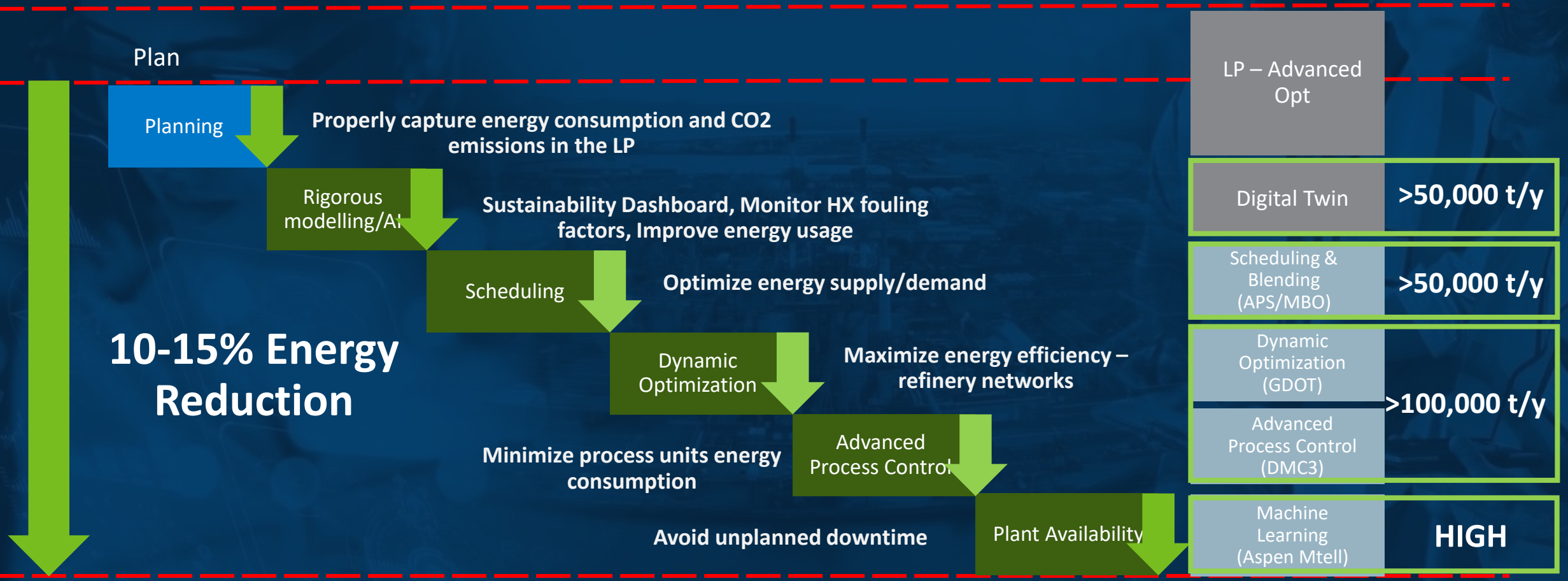
Sustainability

Refining Margin Leakage Reduction for European Customer



With a capacity of 300 KBPD the Ref gap = $50M to $70M

CO_2 Emissions Reduction at European Customer



CO_2 emissions for a 300 KBPD European Refinery are typically in the range of 3.8 – 4.2 M t/y and energy bill is in the range of 250-300 M$/y

Sustainability in Capital-Intensive Industries

Net Zero Carbon

By 2050	Total, Shell, Dow, BP, Repsol, Equinor, OMV, Petronas, Lukoil, OMV
2040	LANXESS
2030	ENI, Sinopec

9% Plastic waste recycled

Alliance to End Plastic Waste, September 2020

>50% Carbon reduction

BP estimates from using renewables in their energy mix
(2020 BP Energy Outlook Summary)

10-30% More Energy Efficiency

possible with digital technologies in industrial processes
(IEA Energy Efficiency Oct 2019)

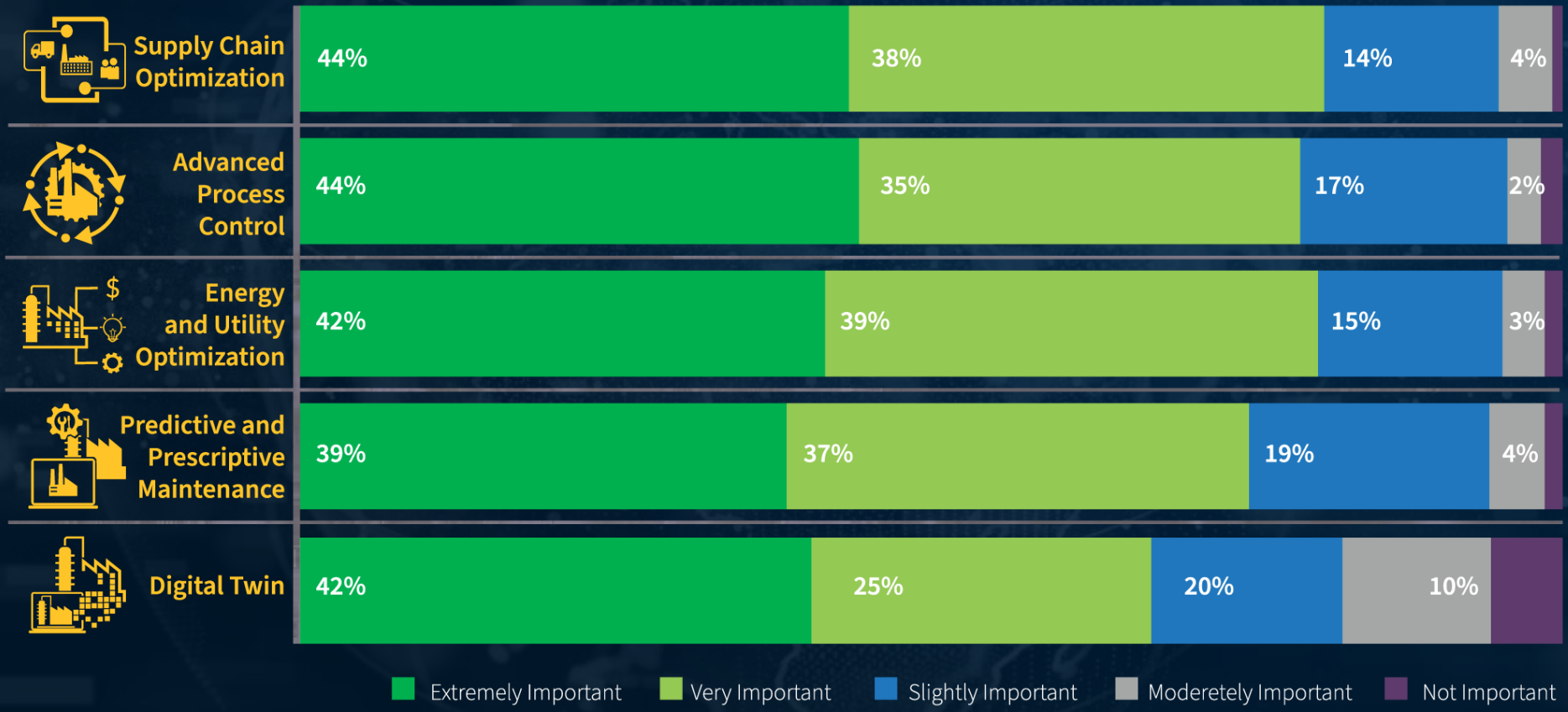
x2 Plastic waste production in 15 years

Alliance to End Plastic Waste, September 2020

Technology is Critical to Progress in Sustainability

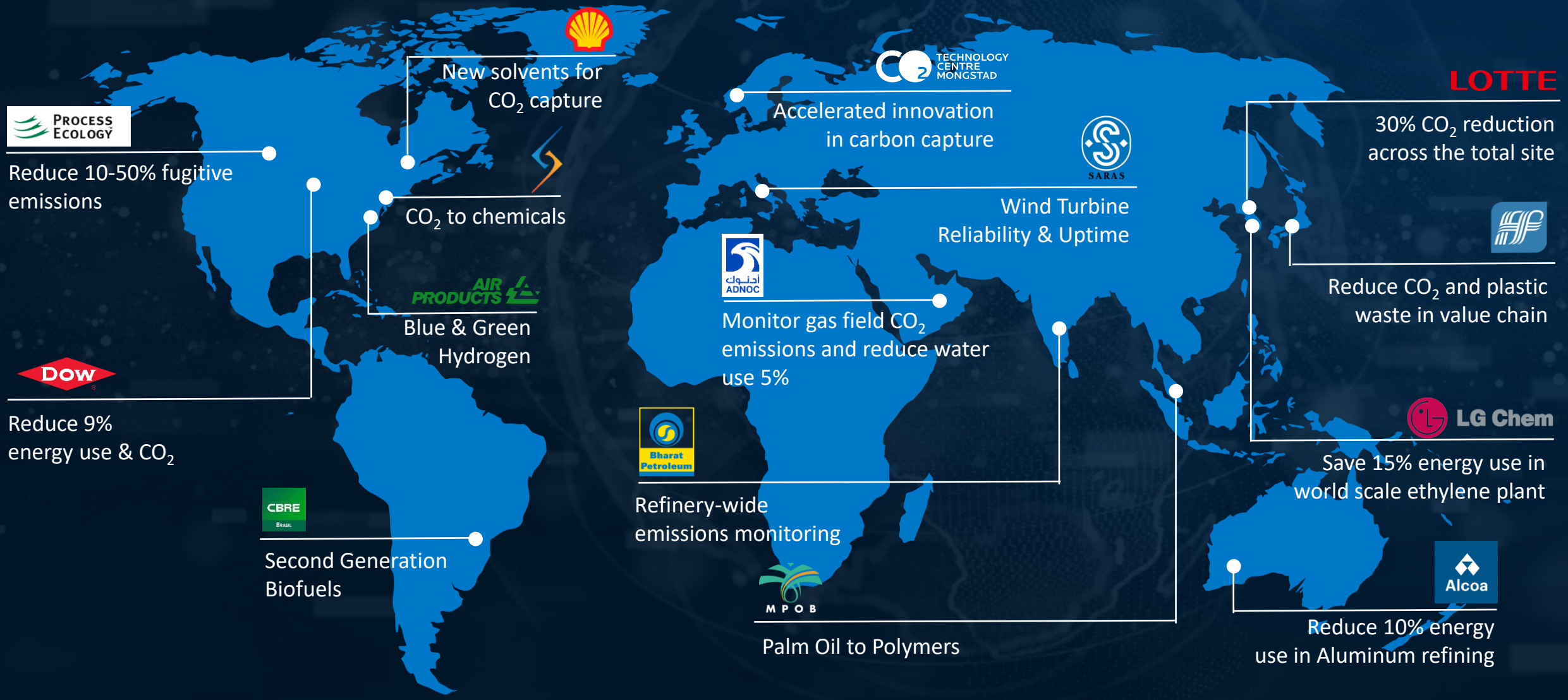
Question:

How valuable are these **Digital Technologies** for improving sustainability?



Source: *The Sustainability Future for Energy and Chemicals*, ARC Strategies Research with Aspen Technology 2020

AspenTech Established Track Record in Enabling Sustainability



Sustainability in Capital-Intensive Industries

Resource Efficiencies

Reduce usage of resources such as energy, water or feedstock

Energy Transition & Decarbonization

Renewable and alternative energy sources, biofuels

Circular Economy

Waste reduction, recycling, renewable feedstocks, innovation

Reduce Emissions & Waste

Sustainability in Capital-Intensive Industries

Resource Efficiencies

Reduce usage of resources such as energy, water or feedstock

Energy Transition & Decarbonization

Renewable/alternative energy sources, biofuels

Circular Economy

Waste reduction, recycling, renewable feedstocks, innovation

Resource Efficiencies

Challenge

Energy inefficiency is creating excess carbon load (up to 20%); Growing global water shortage

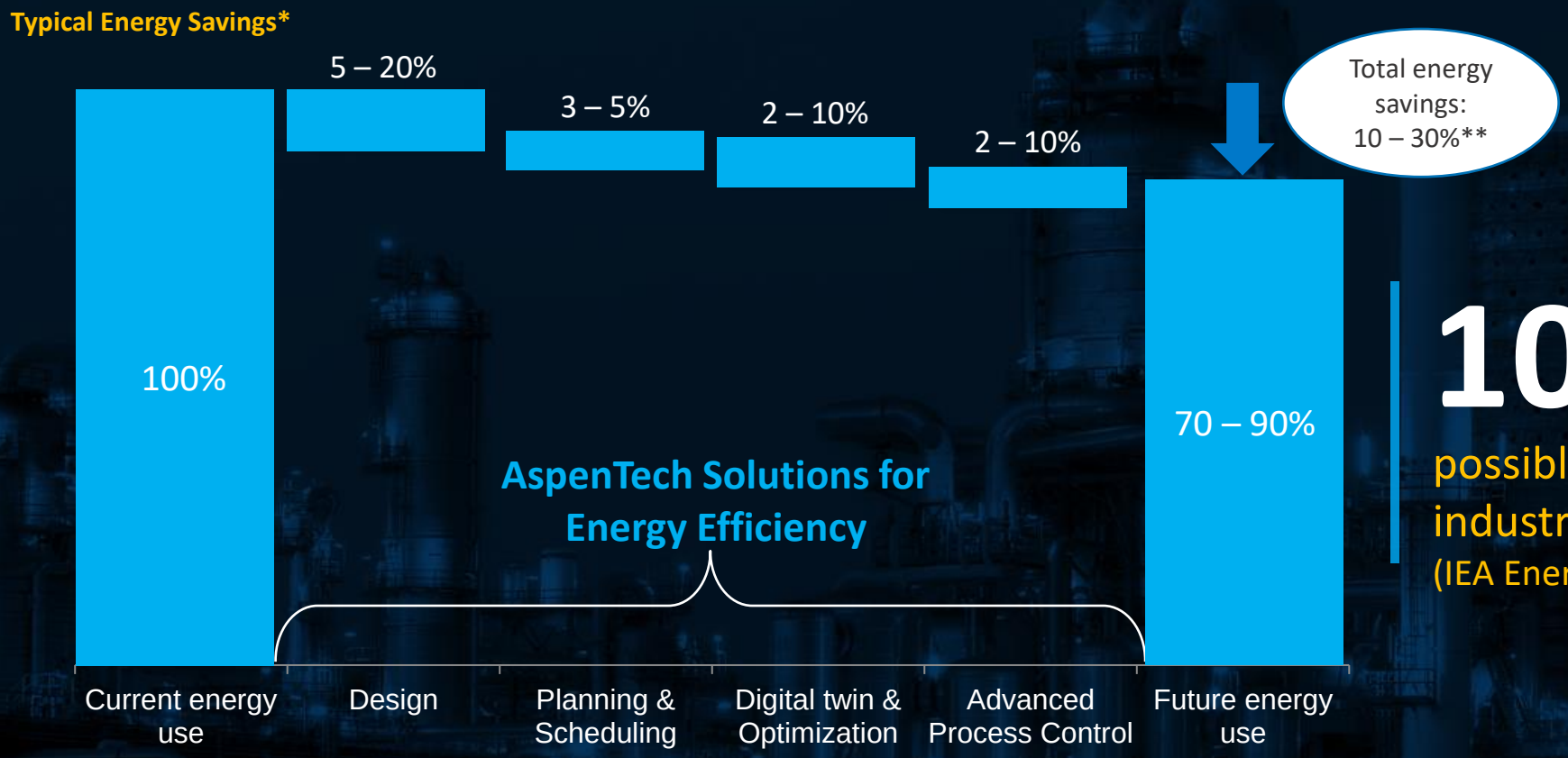
Opportunity

Improve energy and utility effectiveness and efficiency in current operations

Value

Save 10-15% energy use & cost, reduce 20% carbon load

Potential to Deliver 10-30% Energy Savings & Carbon Reduction Today



10-30% More Energy Efficiency

possible with digital technologies in industrial processes

(IEA Energy Efficiency Oct 2019)

* Typical savings based on 26 energy efficiency case studies

** Total savings depends on overlap & synergies

Energy Savings, CO2 Reduction and Yield Increase with Advanced Control and Models Online

Dow Chemical Co has achieved $700 million in cumulative benefits over 9 years, increasing energy efficiency improvement of 9% across 15 sites globally. Dow uses online process models and APC to increase asset capability for alternative feedstocks

Reduced emissions by 80%

Challenge

- Drive to be lowest-cost producer and lowest-emissions producer
- Achieve optimization of ethylene production, year by year, with a global excellence program
- Achieve flexibility for alternative feedstocks
- On-time flawless production

Solution

- DMC commissioned first to help adjust multiple variables and still meet product demands
- Digital twin optimization models added later to address product profitability shifts and energy costs
- Extended to 15 sites

Products:

Aspen Plus, Aspen Online and Aspen DMC

> “Provides visibility and transparency across the entire Shah gas field so all workers understand the sustainability implications daily; decreasing hydrocarbon losses, and energy use by 10%.”

أدنوك
ADNOC

Decreased water use by 10%

Challenge

- Provide actionable sustainability dashboard across Abu Dhabi’s largest gas field (Shah Gas Field)
- Demonstrate value of digital twin, for broader adoption across all assets

Solution

- Actionable operator insights from intuitive visualization
- Online engineering model, calibrated every minute
- Identifies lift gas compressor operating issues for operator action

Products:

Aspen HYSYS, Energy Analyzer, Aspen Utilities, AORA, IP.21

Sustainability in Capital Intensive Industries

Resource Efficiencies

Reduce usage of resources such as energy, water or feedstock

Energy Transition & Decarbonization

Renewable/alternative energy sources, biofuels

Circular Economy

Waste reduction, recycling, renewable feedstocks, innovation

Energy Transition & Decarbonization

Challenge

Reduce carbon footprint and emissions over process life-cycle to achieve long-term carbon neutrality

Opportunity

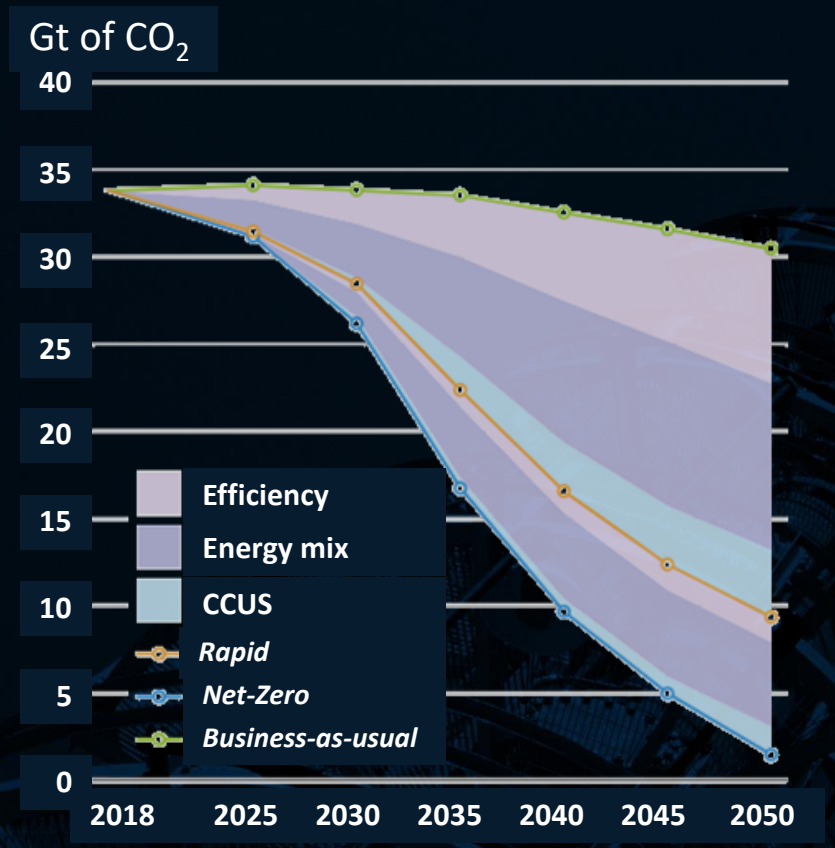
Renewable energy sources, green/blue hydrogen and biofuels; CO_2 capture, utilization and storage

Value

At least 20-50% less footprint, >90% less carbon taxes through CCUS

Energy Transition: Achieving Goals through Tactical & Strategic Actions

Example of carbon emissions from energy use*



>50% **Carbon reduction**

BP estimates* from using renewables in their energy mix

3x **Carbon price in Europe compared to 2018**

CO_2 European Emission Allowance reduction of 2.2% per year

* 2020 BP Energy Outlook Summary

Reduced regeneration steam in a processing column load to allow overall capacity increase. Further improvements identified with 36% reduction in reboiler duty.

DUPONT

Increase capacity by 13%

Challenge

- Commodity business of bio-ethanol production affected by volatility in feedstock prices
- Capacity and energy identified as major goals in current plant improvement
- Plan plant expansions

Solution

- Simulation of dry-grind bio-ethanol separation process
- Identification of bottlenecks
- Resulted in molecular sieve regeneration improvement

Product:
Aspen Plus

Pan Pacific Technologies was able to model and do economic evaluation of algal biofuels process. The model provided basis for analyzing and evaluating biofuels innovations. This was accepted by National Alliance for Advanced Biofuels and Bioproducts

PAN PACIFIC TECHNOLOGIES

Insights on scale-up & costs

Challenge

- Poorly documented thermodynamic and kinematic data for bioprocesses
- Pan Pacific Technologies needed to model algal biofuels process to communicate its value to a wide audience

Solution

- Aspen Plus to model bioprocess
- APEA, ACCE and Aspen Dynamics for further analysis
- Easy access to aspenONE Engineering made modeling complex process & economics possible

Products:

Aspen Plus, APEA, ACCE, Aspen Plus Dynamics

Sustainability in Capital Intensive Industries

Resource Efficiencies

Reduce usage of resources such as energy, water or feedstock

Energy Transition & Decarbonization

Renewable/alternative energy sources, biofuels

Circular Economy

Waste reduction, recycling, renewable feedstocks, innovation

Circular Economy

Challenge

Reduce waste and extend product life to lower environmental impact

Opportunity

Design out waste, pollution and optimize recovery of energy and material after use

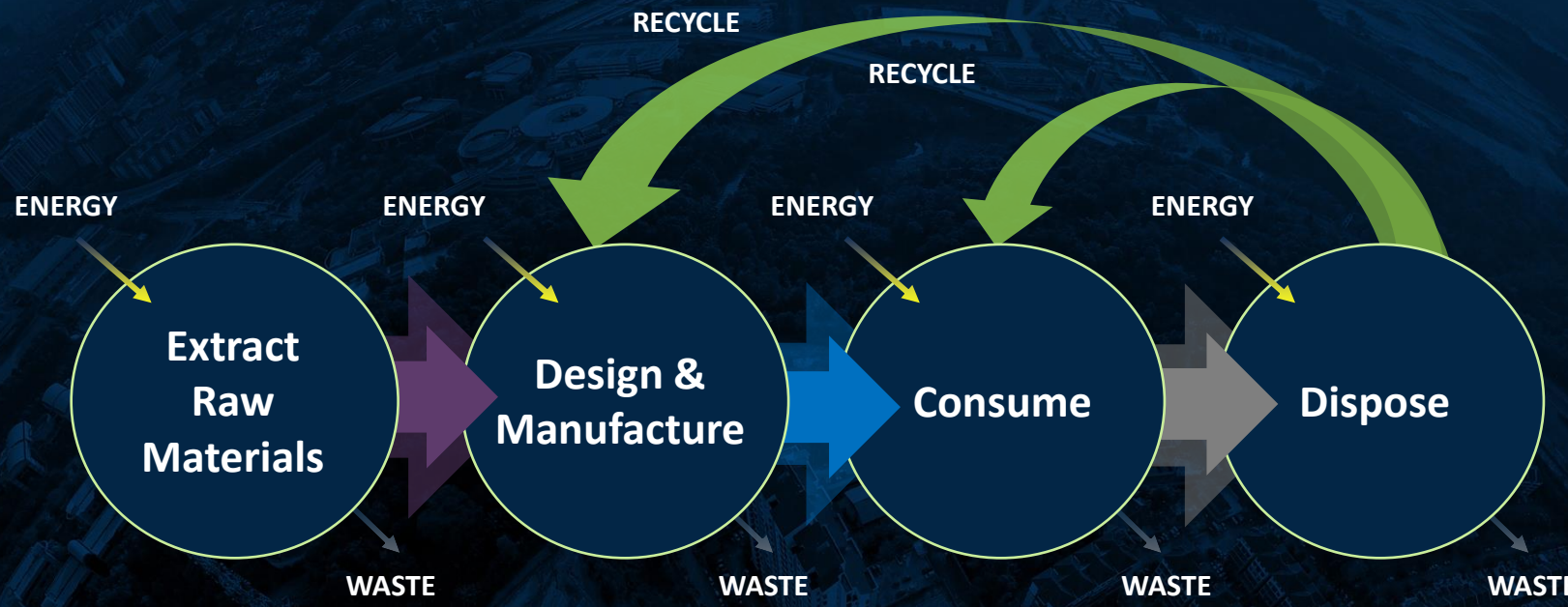
Value

Up to 85% reduction in CO_2 emissions using chemical recycling versus conventional feedstock*

* *Chemical Recycling,* CEFIC October 2020

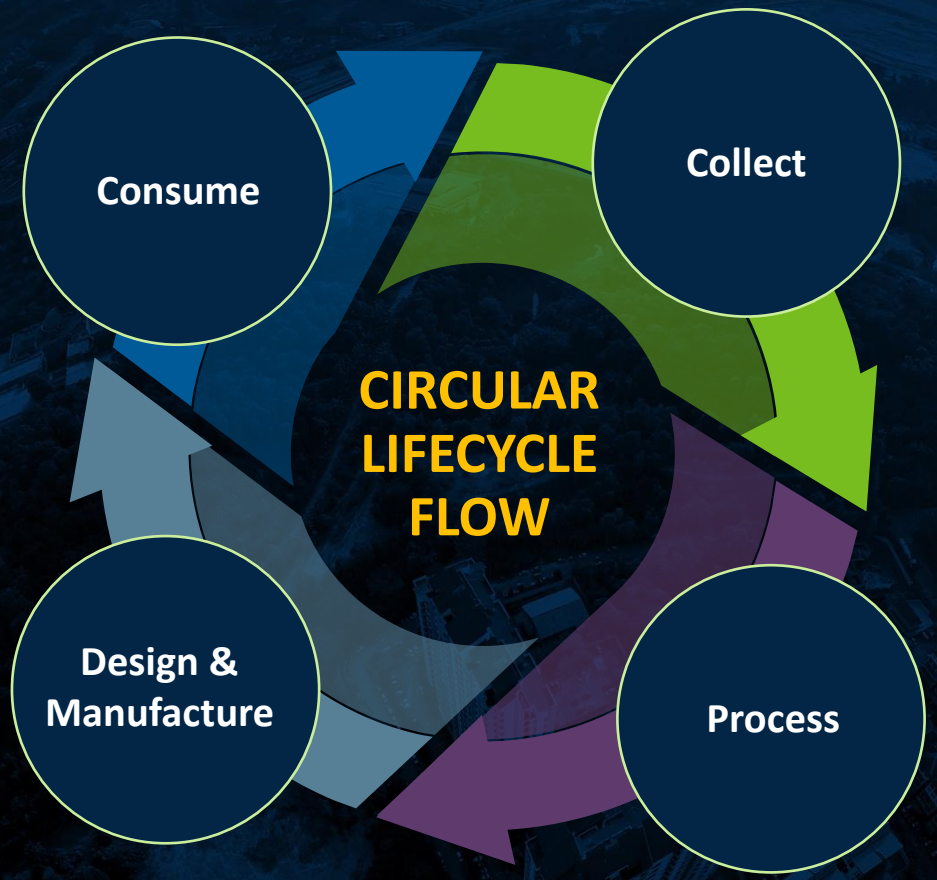
Circular Economy Impacts the Entire Value Chain

LINEAR LIFECYCLE FLOW



Redesign processes and products to *reduce* **waste** and **emissions**

Circular Economy Impacts the Entire Value Chain



Redesign processes and products to *eliminate* **waste** and **emissions**

135,000 MT* less in CO_2 emitted in FY2018 enabled by improved distribution and planning solutions.
Recycling initiative results 374,096 MTs* less waste landfilled.

FP CORPORATION

Reduce CO_2 emissions by 135,000 MT

Challenge

- Provide stable and responsive food distribution in environmentally-friendly, efficient way
- Minimize CO_2 Emissions
- Sell recycled products as an economically sustainable activity

Solution

- Aspen Supply Chain Planner provides a “high degree of precision” to production and distribution planning to FPCO’s network
- Distribution network utilizes returning trucks to collect used containers

2020 GREEN SUPPLY CHAIN AWARD SDCExecutive

Product:
aspenONE Supply Chain Management Solutions

Reducing treatment chemical usage not only reduces environmental risks but creates business efficiencies as well!

Petrocuyo

Reduced peroxide use by 60%!

Challenge

- Achieving desired melt flow of final products often required downstream treatment before shipping
- Treatment with peroxide required 80% of the time

Solution

- Aspen ProMV™ was used monitor predicted final melt point to enable process correction before off spec product resulted
- Two months of analysis resulted in successful campaigns
- Total estimated >60% reduction in chemical use across all campaigns

Product:
Aspen ProMV

Sustainability in Capital-Intensive Industries

Net Zero Carbon

By 2050	Total, Shell, Dow, BP, Repsol, Equinor, OMV, Petronas, Lukoil, OMV
2040	LANXESS
2030	ENI, Sinopec

9% Plastic waste recycled

Alliance to End Plastic Waste, September 2020

>50% Carbon reduction

BP estimates from using renewables in their energy mix
(2020 BP Energy Outlook Summary)

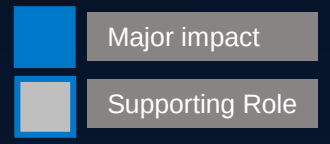
10-30% More Energy Efficiency

possible with digital technologies in industrial processes
(IEA Energy Efficiency Oct 2019)

x2 Plastic waste production in 15 years

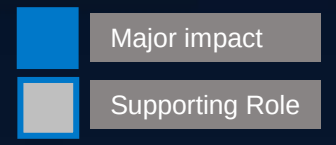
Alliance to End Plastic Waste, September 2020

Sustainability Levers Mapped to Technology Solutions



		Resource Efficiency		Energy Transition					Circular Economy			
		Emissions (all GHG sources)	Energy & Water Efficiency	Biofuels	Carbon Capture & Utilization	Green & Blue Hydrogen	Crude to Chemicals	Solar/Wind/ Renewable/ Storage	Plastics & Materials Recycling	CO_2 to Chemicals	Innovative Process/ Products	Bio-based Feedstock
All	Energy & Emissions Monitoring/Optimization	■	■	■	■	■	■		■	■	■	■
Performance Eng.	Strategy, Capital Planning (CAPEX) and Design	▣	▣	■	■	■	■		■	■	■	■
	Digital Twin	■	■	▣	■	■	■		■	■	■	■
	Utility Optimization	▣	■			▣	■	■	■	■	■	
Prod. Opt.	Planning/Scheduling		■	▣	▣	▣	■		▣		▣	▣
	Control & Optimize	▣	■	■	■	■	■		■	■	■	■
	Monitor & Execute	■		■	■	▣	▣	■	▣	▣	■	■
Value Chain	Supply/Value Chain optimization			▣	▣	■	■		■	▣	▣	▣
	Waste Accounting	■	▣	■			▣		▣	▣	▣	▣
APM	Predictive Maintenance and Asset Health	■			▣	▣	■	■	▣	▣	▣	▣

Sustainability Levers Mapped to Technology Solutions



		Resource Efficiency		Energy Transition					Circular Economy			
		Emissions (all GHG sources)	Energy & Water Efficiency	Biofuels	Carbon Capture & Utilization	Green & Blue Hydrogen	Crude to Chemicals	Solar/Wind/ Renewable/ Storage	Plastics & Materials Recycling	CO_2 to Chemicals	Innovative Process/ Products	Bio-based Feedstock
All	Energy & Emissions Monitoring/Optimization	■	■	■	■	■	■		■	■	■	■
Performance Eng.	Strategy, Capital Planning (CAPEX) and Design	▣	▣	■	■	■	■		■	■	■	■
	Digital Twin	■	■	▣	■	■	■		■	■	■	■
	Utility Optimization	▣	■			▣	■	■	■	■	■	
Prod. Opt.	Planning/Scheduling		■	▣	▣	▣	■		▣		▣	▣
	Control & Optimize	▣	■	■	■	■	■		■	■	■	■
	Monitor & Execute	■		■	■	▣	▣	■	▣	▣	■	■
Value Chain	Supply/Value Chain optimization			▣	▣	■	■		■	▣	▣	▣
	Waste Accounting	■	▣	■			▣		▣	▣	▣	▣
APM	Predictive Maintenance and Asset Health	■			▣	▣	■	■	▣	▣	▣	▣

Energy Transition to Hydrogen Economy

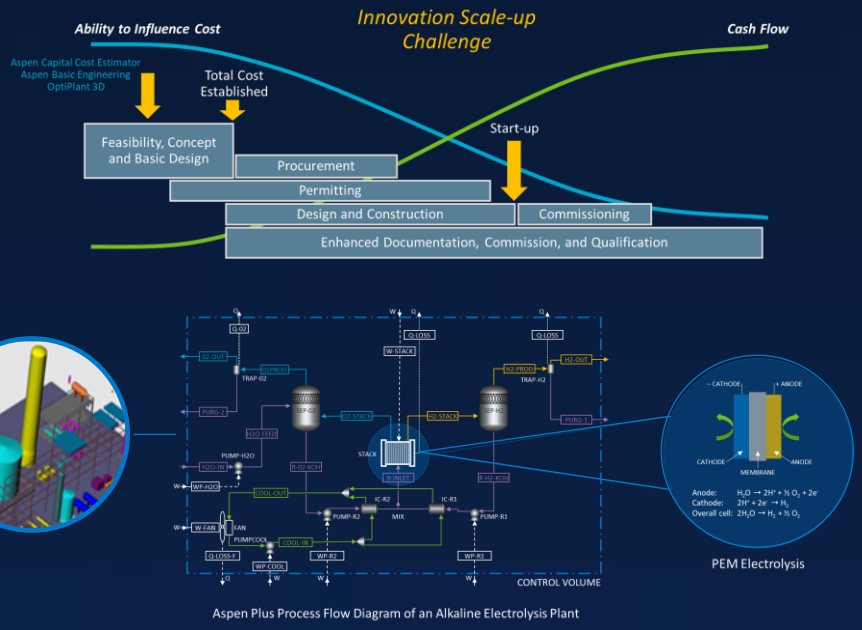
Path to Net Zero Carbon

Challenges

- Improve time to market
- Optimize process & cost efficiencies
- Operate innovative processes effectively

Benefits

- Accelerate techno-economic analysis
- Design and operate with process and energy efficiency
- Maximize uptime and safety and minimize risk

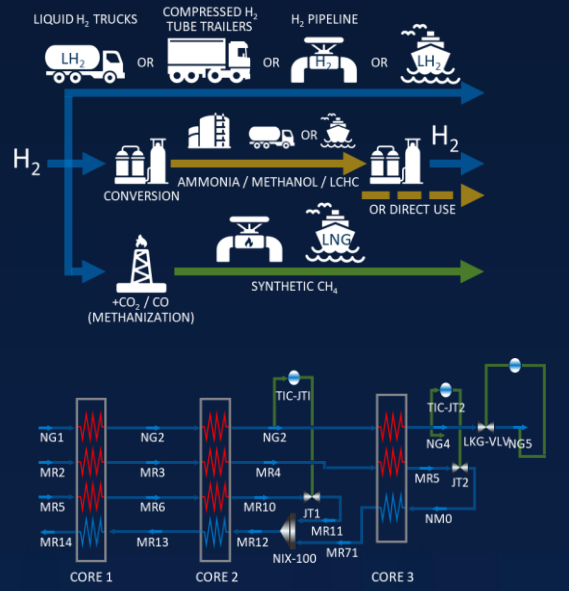


DESIGN

OPERATE

MAINTAIN

Production

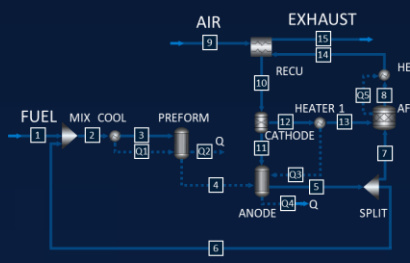


Distribution & Storage

DESIGN

OPERATE

MAINTAIN



Usage

Key Takeaways

Resource Efficiencies

Reduce usage of resources such as energy, water or feedstock

Energy Transition & Decarbonization

Renewable/alternative energy sources, biofuels

Circular Economy

Waste reduction, recycling, renewable feedstocks, innovation

Challenge

Evolve businesses to dramatically reduce emissions and waste while still meeting profit and growth goals

Opportunity

Improve product mix, supply chain, and manufacturing to win in sustainable economy

Value

Increase company value and market share through positive sustainability positioning


aspentech
Thank You.

Financial Highlights

Karl E. Johnsen, Chief Financial Officer

February 12, 2021

Safe Harbor Statement

This presentation may contain forward-looking statements for purposes of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Actual results may vary significantly from Aspen Technology's expectations based on a number of risks and uncertainties, including, without limitation, the risk factors described in Aspen Technology's most recent Annual Report on Form 10-K and any subsequent quarterly reports on Form 10-Q, each as filed with the U.S. Securities and Exchange Commission. Aspen Technology cannot guarantee any future results, levels of activity, performance, or achievements. Further, Aspen Technology expressly disclaims any current intention to update any forward-looking statements after the date hereof.

How to Measure our Performance — Key Metrics

Topic 606 — Impacted the way we recognized revenue, but not the value we create for customers and investors. We have not changed the way we contract with customers.

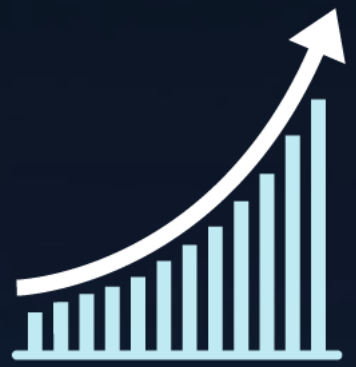
Business Metrics

- **Annual Spend** — is an estimate of the annualized value of our portfolio of term license arrangements. Annual spend is calculated by summing the most recent annual invoice value of each of our active term license contracts. Comparing annual spend for different dates can provide insight into the growth and retention rates of our business.
- **Bookings** — is the total value of customer term license contracts signed and delivered in the current period, plus term license contracts signed in a previous period for which the initial licenses are deemed delivered in the current period. License revenue is heavily impacted by the timing of Bookings, and more specifically renewal Bookings. A decrease or increase in Bookings between fiscal periods resulting from a change in the amount of term license contracts up for renewal is not an indicator of the health or growth of our business.
- **Total Contract Value** — is defined as the aggregate value of all payments received or to be received under all active term license agreements, including maintenance and escalation. Comparing Total Contract Value for different dates provides insight into the total revenue that will be recognized under our active contracts.

Non-GAAP Metric

- **Annual Free Cash Flow** — is calculated as net cash provided by operating activities adjusted for the net impact of (a) purchases of property, equipment and leasehold improvements, (b) capitalized computer software development costs, (c) non-capitalized acquired technology, (d) excess tax benefits from stock-based compensation and (e) other nonrecurring items, such as acquisition and litigation related payments. Annual free cash flow is the best metric to assess the overall value our business creates in a period.

Financial Strengths



Sustained Growth

Best in Class Profitability

Sustained Free Cash Flow

Disciplined Capital Allocation

Financial Strengths

Sustained Growth

- Multi year sustained organic growth in Annual Spend
- $5.78 billion FY20 TAM with ~15% year over year growth rate
- Significant investment in research and development
- Average 5-year contracts with low attrition
- 2–3% annual contract escalation
- > $59 billion of annual customer value creation (100:1 value to cost ratio)
- Mission-critical products and solutions

Best in Class Profitability

- Investing organically and inorganically while maintaining best in class profitability based on Annual Spend
  - 87% – 90% Gross Margin
  - 47% – 50% Non-GAAP Operating Margin
- Operating results obtained from disciplined investment process and leverageable sales model

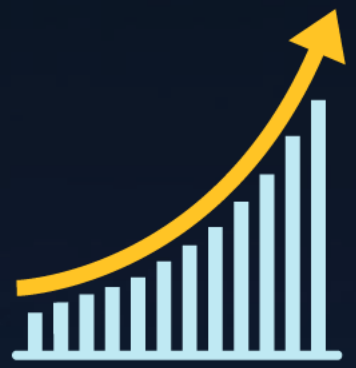
Sustained Free Cash Flow

- 41% to 44% Free Cash Flow as a percentage of Annual Spend
- Average 5-year contracts including annual payments in advance with 2–3% annual contract escalation
- Allows for multi-year investment strategy
- World-class customer base
- Low bad debt expense and DSO

Disciplined Capital Allocation

- Competitive advantage provided by sustained, predictable Free Cash Flow
- Focus on short-term and long-term shareholder value
- Organic and inorganic investments with excess capital returned to shareholders via buybacks

Financial Strengths



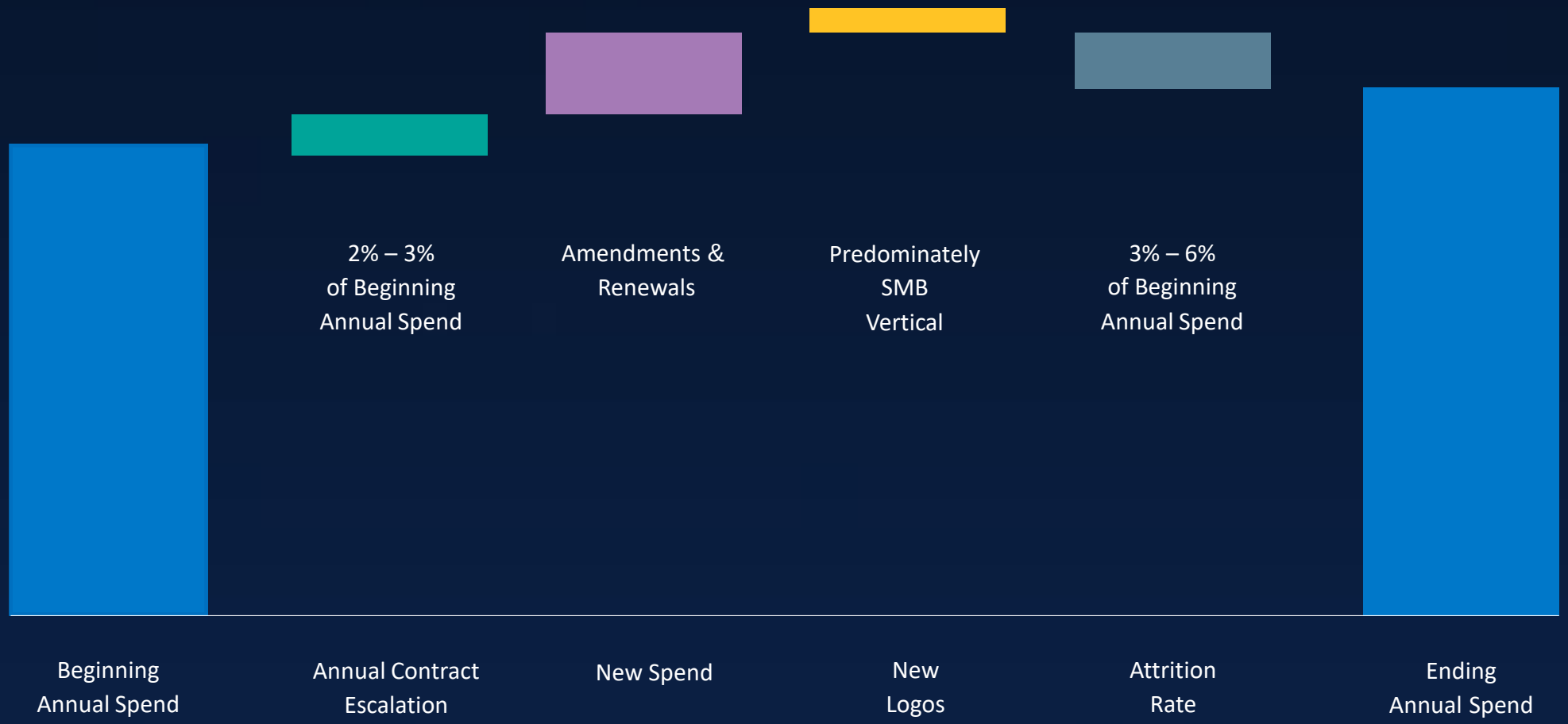
Sustained Growth

Best in Class Profitability

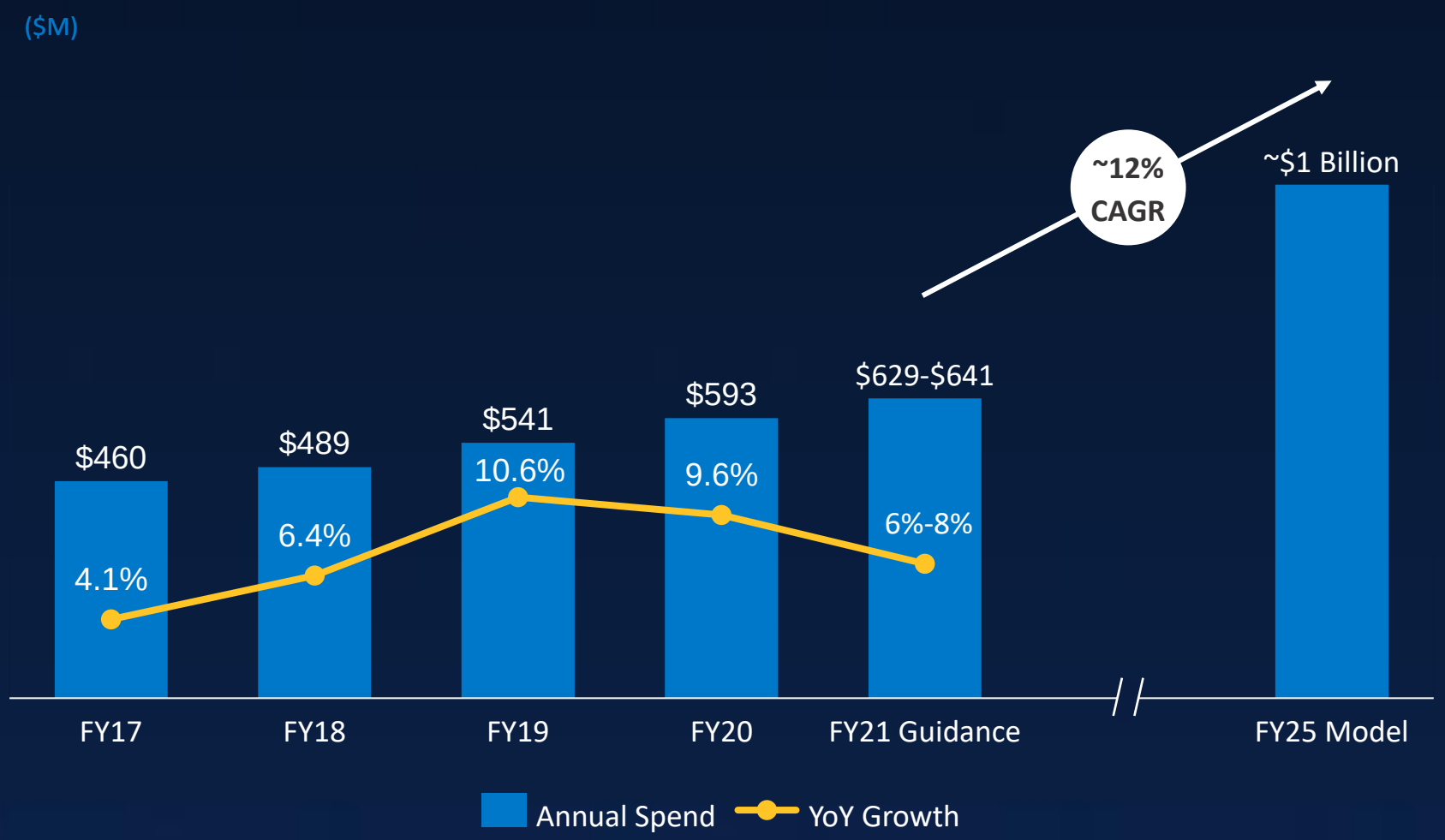
Sustained Free Cash Flow

Disciplined Capital Allocation

How Annual Spend Grows



Annual Spend

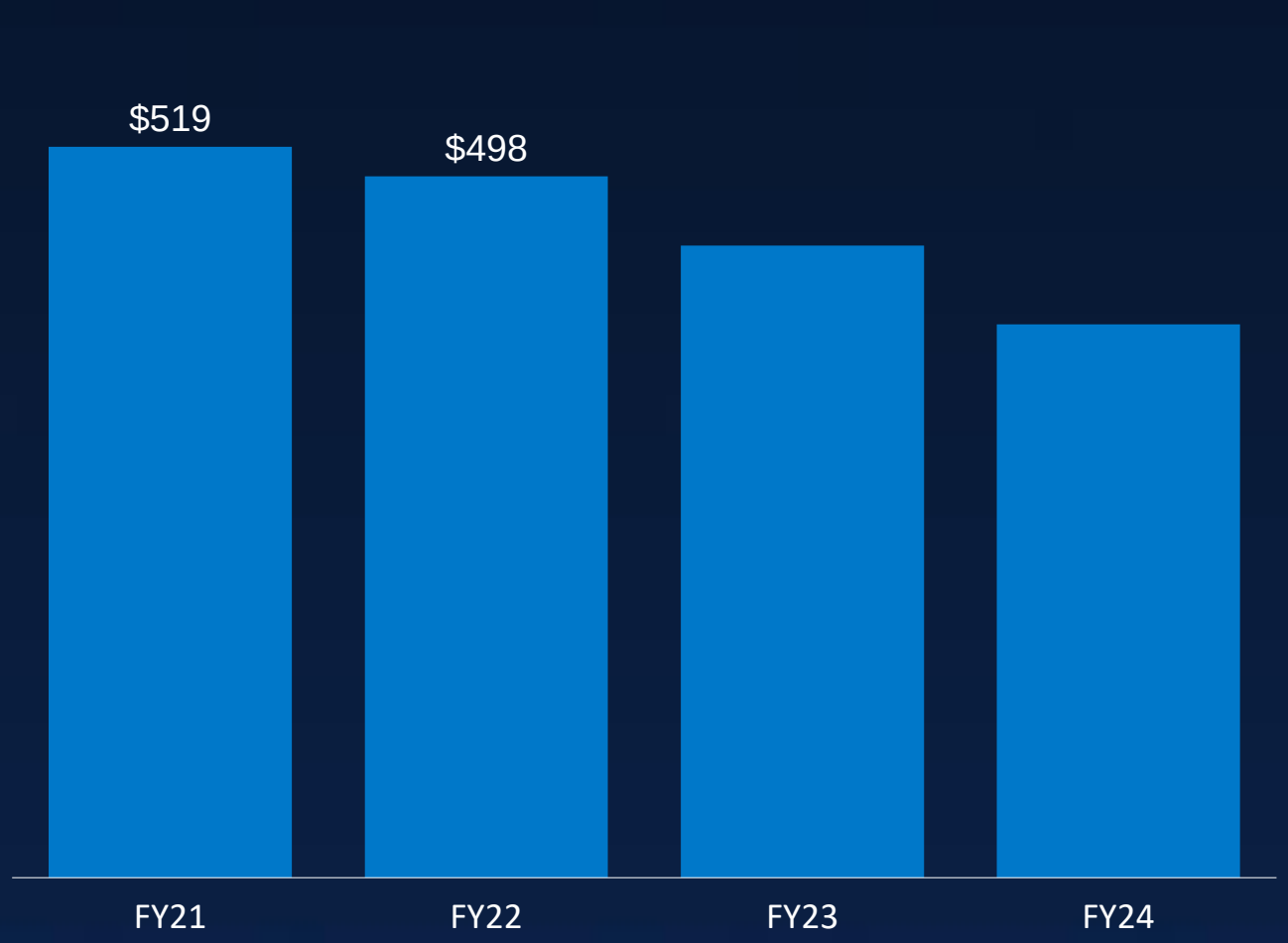


- Provides insight into the growth and retention rate of our customers
- Leading indicator of cash inflow
- Provides financial stability and predictability
  - Average 5-year contracts
  - 2–3% annual escalation
  - High renewal rates
- We will provide annual guidance with quarterly directional guidance

Bookings

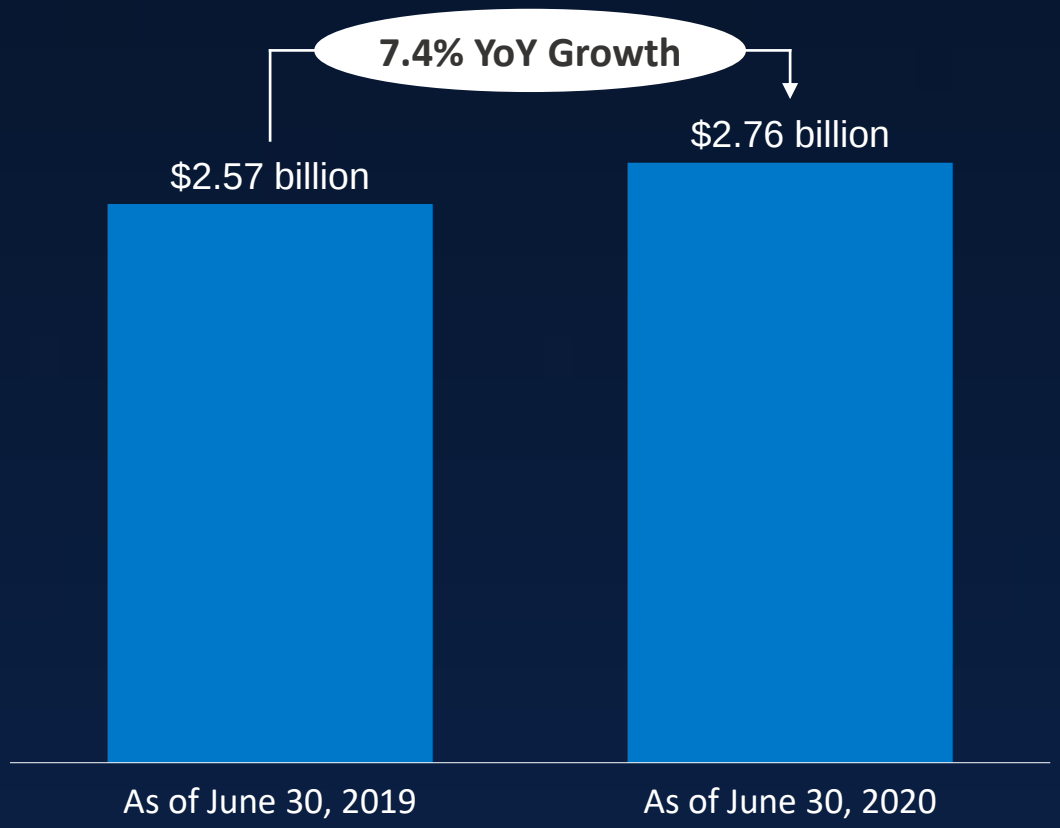
- Bookings include both renewals and growth bookings
- Bookings are heavily influenced by the timing of renewals
- The timing of renewals is not linear between quarters or fiscal years
- We will provide annual guidance, including value of renewals, as well as renewals for the next quarter

Renewal Bookings for FY2021—FY2024



- Renewal Bookings information provided from FY21–FY24 was based on our outlook as of June 30, 2020
- The actual timing of the Renewal Bookings can be impacted by early renewals

Total Contract Value



- **Total Contract Value**—is defined as the aggregate value of all payments received or to be received under all active term license agreements, including maintenance and escalation
- Comparing Total Contract Value for different dates provides insight into the total revenue that will be recognized under our active contracts
- We will be providing Total Contract Value on an annual basis

Financial Strengths

Sustained Growth

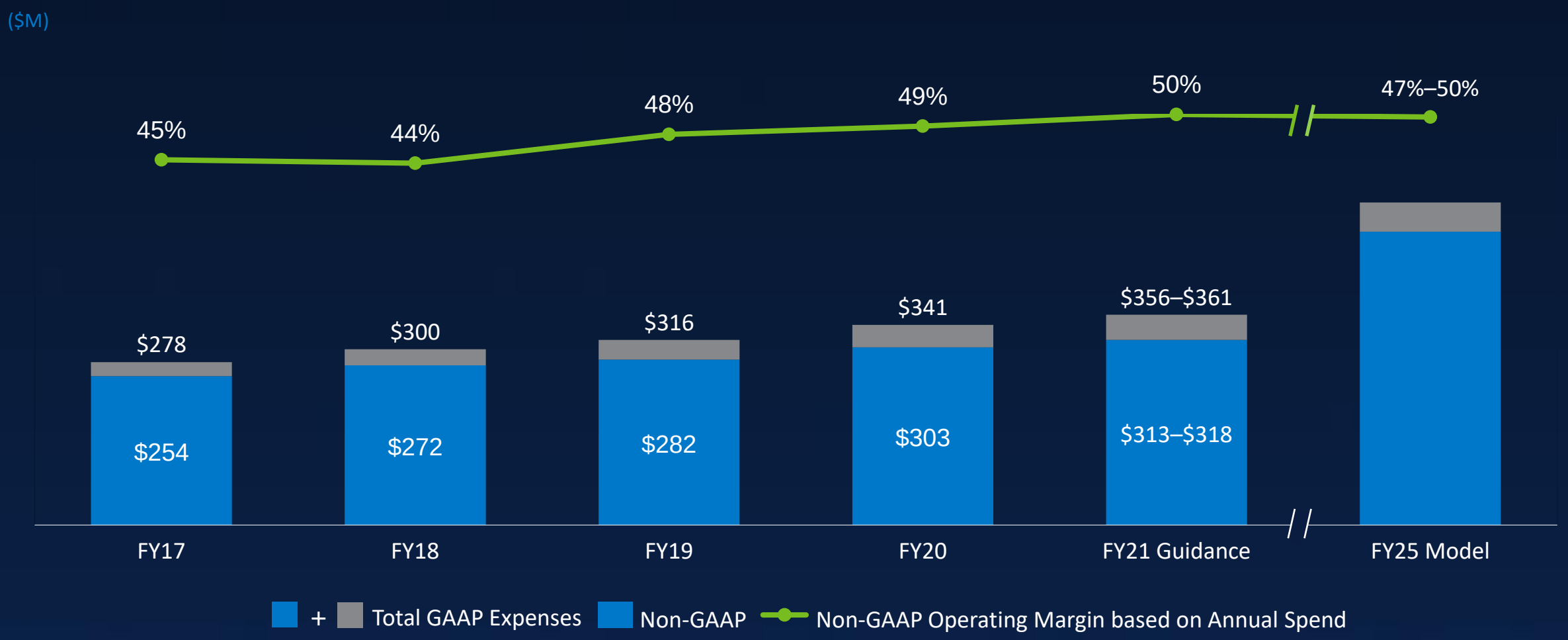
Best in Class Profitability

Sustained Free Cash Flow

Disciplined Capital Allocation

Expenses

GAAP & Non-GAAP Total Costs[1]



1. Non-GAAP costs are GAAP costs adjusted for the impact of stock-based compensation expense, non-capitalized acquired technology, amortization of intangibles, and other nonrecurring items, such as the impact of litigation judgments and acquisition related fees.

Target Operating Model

Stated as percentage of Annual Spend

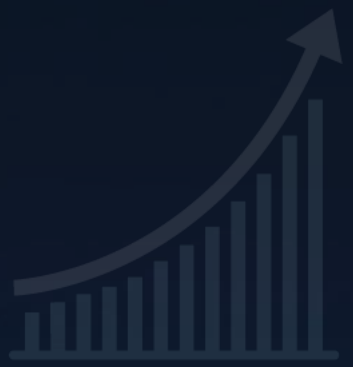
	Target Values	FY2020 Actual*
Ending Annual Spend	100%	100%
Cost of Revenue	10–13%	10%
Sales & Marketing	20–22%	19%
Research & Development	14–16%	16%
General & Administrative	8–9%	12%
GAAP Operating Expenses	43–46%	47%
GAAP Operating Margin	42–45%	42%
Non-GAAP Operating Margin	47–50%	49%

GAAP

Non-GAAP

*Totals may not equal 100% due to rounding

Financial Strengths



Sustained Growth

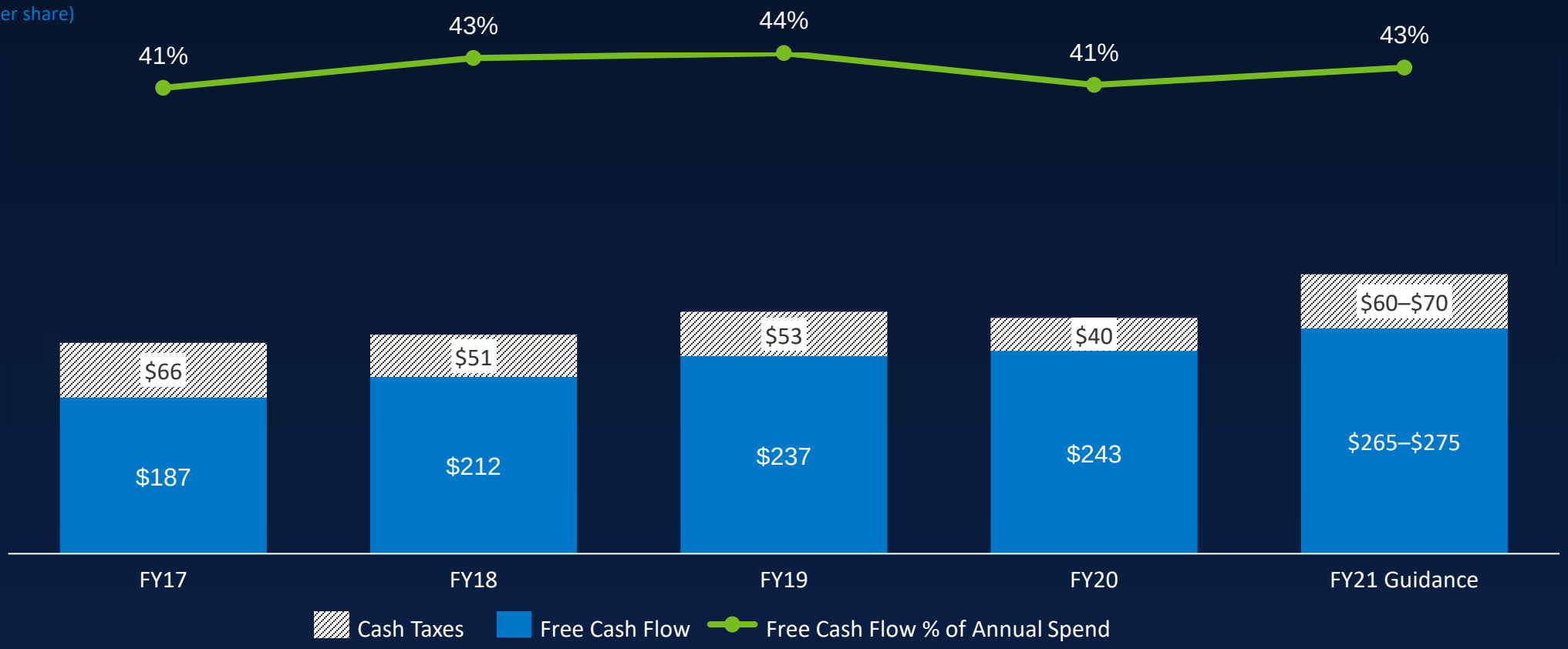
Best in Class Profitability

Sustained Free Cash Flow

Disciplined Capital Allocation

Free Cash Flow[1]

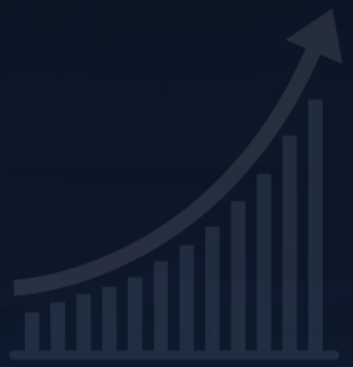
($M's except per share)



	FY17	FY18	FY19	FY20	FY21 Guidance
Free Cash Flow Per Share	$2.43	$2.91	$3.34	$3.54	$3.87–$4.02
Cash Taxes Per Share	$0.85	$0.69	$0.75	$0.58	$0.88–$1.02

1. Free cash flow is net cash provided by operating activities adjusted for the net impact of (a) purchases of property, equipment and leasehold improvements, (b) capitalized computer software development costs, (c) non-capitalized acquired technology, (d) excess tax benefits from stock-based compensation and (e) other nonrecurring items, such as acquisition and litigation related payments.

Financial Strengths



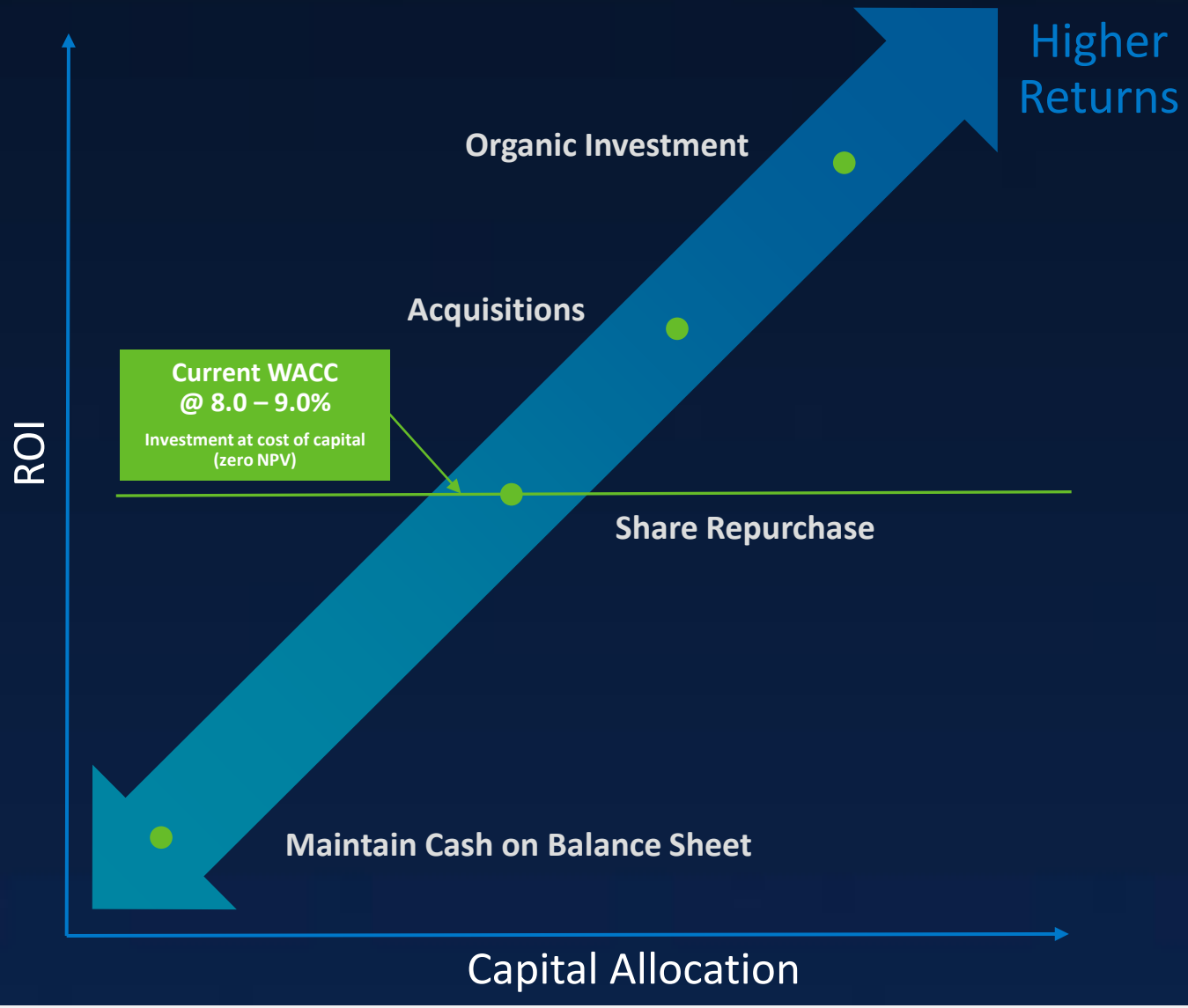
Sustained Growth

Best in Class Profitability

Sustained Free Cash Flow

Disciplined Capital Allocation

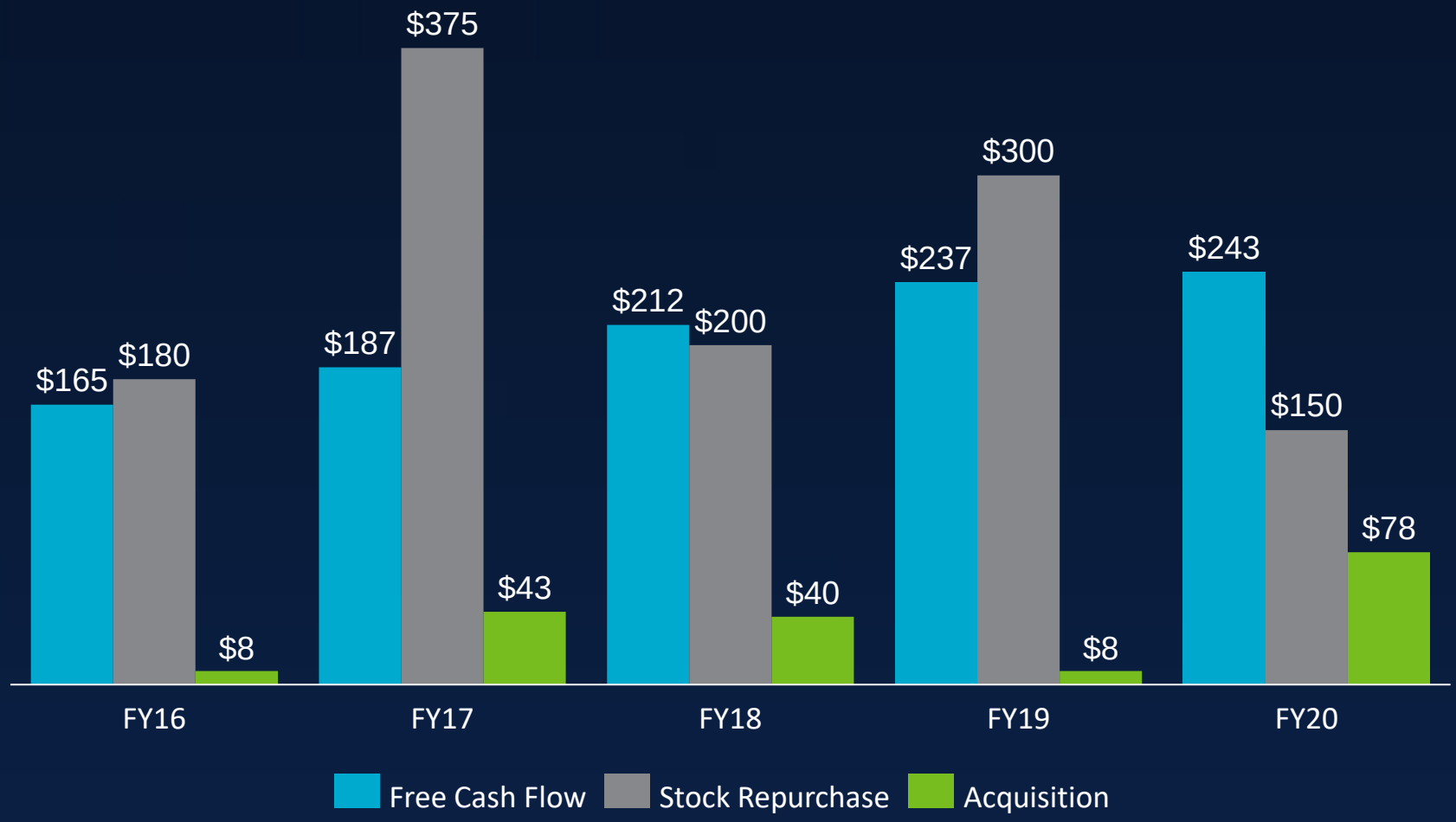
Capital Allocation



- Goal: Allocate AspenTech's capital in the most efficient manner to create long-term shareholder value
- Allocation is based on:
  - Disciplined value based process
  - AspenTech's short and long term strategy
  - WACC driven return on investment of the different options
  - Current and anticipated market conditions
  - Quantitative and qualitative criteria
- Capital allocation is evaluated on a continuous basis
- Target Capital Structure
  - Approximately $100 million in cash
  - Gross Leverage at 0.5 – 2x turns of annual Free Cash Flow with ability to lever up to 3 – 4x temporarily

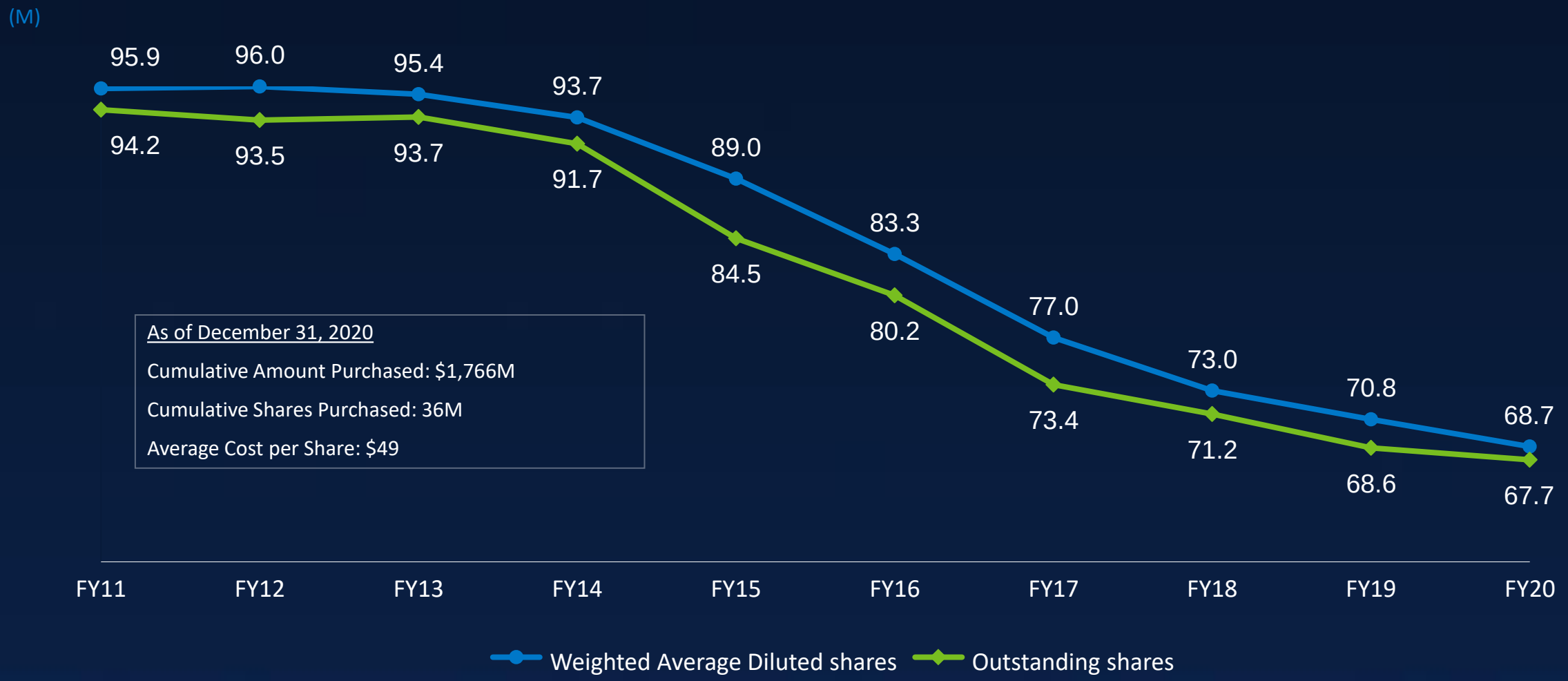
Historical Capital Allocation

($M)



	FY16	FY17	FY18	FY19	FY20
Cash & Equivalents	$321	$102	$96	$72	$288

Share Repurchase Impact on Outstanding and Diluted Shares



FY2021 Guidance

($M's except per share)	FY2021 Guidance[1]
Annual Spend Growth	6% – 8%
Bookings	$805 – $850
Total Revenue	$731 – $760
Total GAAP Expenses	$356 – $361
Operating Income	$375 – $399
Net Income	$328 – $347
Net Income Per Share	$4.80 – $5.08
Total Non-GAAP Expenses	$313 – $318
Non-GAAP Operating Income	$418 – $442
Non-GAAP Net Income	$328 – $347
Non-GAAP Net Income Per Share	$5.29 – $5.58
Free Cash Flow	$265 – $275

1. Guidance assumes 68.4M weighted average diluted shares outstanding

Key Assumptions:

- FY2021 Revenue does not include 'one time' revenue items
- Does not reflect potential acquisitions
- FY2021 share count does not assume stock repurchases after December 31, 2020
- Current plan is to repurchase approximately $200M of our stock in FY2021

Key Takeaways

- World-class customer base with significant upsell opportunities
- Mission critical products and solutions
- Multiple pathways to grow within our installed base with a leverageable sales model
- Best-in-class profitability with average 5-year contracts provide predictable Free Cash Flow
- Disciplined capital allocation focused on short-term and long-term shareholder value
- Focused return on organic and inorganic investments


aspentech
Thank You

Summary

Antonio Pietri, President and Chief Executive Officer

Today's Takeaways

- AspenTech is a very different company today from 5 years ago, and will again be a very different company 5 years from now
- Industrial AI is a game changer for capital intensive industries and their sustainability and profitability objectives
- Our capacity to invest is a strategic advantage

Today's Takeaways

- Culture of 'Disciplined Agility'
- Target of $1 Billion of Annual Spend with best-in-class profitability in FY25
- Opportunity to become the software platform for manufacturing operations in capital intensive industries


aspentech
Q&A


aspentech
Thank You, and Goodbye.