An Introduction to AVEVA’s engineering solutions for non-engineering clients

Greg Pada
Delivering a complete digital thread, purpose-built for industry

Accelerate time-to-value with flexible, scalable, and trusted industrial hybrid SaaS solutions

**Visualization**
Multi-experience engineering and operations visualization across the enterprise

**Simulation and learning**
Process simulation, operator training, enterprise learning

**Engineering and execution**
Engineering, 3D design, project execution

**Operations control**
Edge, supervisory, enterprise control

**Asset performance**
Asset strategy, asset analytics, maintenance execution

**Production optimization**
Operations execution, process optimization, production management

**Planning and scheduling**
Feedstock management, supply chain planning and scheduling

**Industrial information management**

**Engineering:** Engineering data collection, aggregation, storage and contextualization

**Operations:** Real-time data collection, aggregation, contextualization, events and self-service calculations

**Support your hybrid cloud architecture**

**Third-party visualization**

**Third-party apps and analytics**

**Third-party data sources, systems, and databases**

**Data sharing**

**Design** ➔ **Operate** ➔ **Optimize**
We’re integrating software for a seamless life cycle

Closing the loop to drive better design and continuous optimization

The future of industry is connected

Across roles
Across functions
Across companies
Across partnerships
The opportunity ...

Connecting engineering to operations—driving incremental value through a virtuous cycle

Engineer (execute projects)
- Better designs and models
- Monetize operational insights
- Reduce carbon footprint

Drive innovation through operations feedback

Owner’s digital twin: Aggregate and visualize in context (facility/fleet)

EPC’s digital twin: Aggregate and visualize in context (facility/fleet/all end users)

Enable digital twin value by optimizing and enhancing operations

Operate
- Faster project handovers
- Enable the knowledge worker
- Native asset intelligence for optimal operations
The opportunity...

Creating incremental value at every step in the cycle

**Drive innovation** through operations feedback

**Project**
- Aggregate project information
- Simulate, engineer and design
  - Plant level
  - Component
- Estimate, plan, procure, construct
- Commission
- Handover to Operations

**Engineering digital twin**: Aggregate and visualize in context (facility/fleet/all end users)

**Operate**
- Operations systems
  - Predictive analytics
  - Maintenance systems
  - DCS/safety systems
  - Production planning
  - ERP
- Operations systems configured from engineering data, ease of configuration and consistency

**Owner’s digital twin**: Aggregate and visualize in context (facility/fleet)

**Enable digital twin value** by optimizing and enhancing operations

1. **Digital project execution**: Predictable cost with 15% lower TIC, predictable schedule
2. **Digital handover**: Progressive handover during project, minimum time to start up/get to production
3. **Operations staff** trained as plant is constructed, ready for ops/support commissioning
4. **Operations systems** configured from engineering data, ease of configuration and consistency

Drive innovation through operations feedback

Engineer and design

Estimate, plan, procure, construct

Commission

Handover to Operations

Operations systems

Predictive analytics

Maintenance systems

DCS/safety systems

Production planning

ERP

AVEVA™ PI System™/historian

Operations systems configured from engineering data, ease of configuration and consistency

Operations systems

Predictive analytics

Maintenance systems

DCS/safety systems

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**Digital project execution**: Predictable cost with 15% lower TIC, predictable schedule

**Digital handover**: Progressive handover during project, minimum time to start up/get to production

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**Operations systems** configured from engineering data, ease of configuration and consistency

AVEVA™ PI System™/historian
AVEVA’s engineering solution use cases

Project execution models

- Owner-driven
- Hybrid
- EPC-driven

CAPEX
Create digital asset

EPC 4.0 – project

Digital twin
Operations data + asset data

EIM/AIM:
(Project portal/project command center)

Authoring/data creation:
Unified engineering

Procurement/matls/const planning:
Project execution

Handover

Support for digital twin

OPEX

Digital twin – asset info management

Visualize asset data
EIM/AIM:

Asset data maintenance:
Unified engineering

Third-party engr solutions

Legacy data digitalization
PCM, data conversions

BROWNFIELD:
(CAPEX during OPEX)

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AVEVA’s engineering – unifying engineering, execution and learning
AVEVA™ Unified Engineering

1D, 2D, 3D multi-discipline engineering and design leveraging common data

- Process engineering/dynamic simulation
- Mechanical engineering
- Specialist engineers
- Electrical engineering
- DCS & safety engineers
- Instrumentation engineering
- Drafters
- 2D - P&IDs & schematics
- 1D - Lists/reports
- 3D - Plant layout
- Piping/structural/electrical design
- Procurement
- Construction
- Real-time reporting
- Project managers
- Operators

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Data-centric engineering – so what??

Critical value propositions

• Define asset data needed in operations – when the data is being created
  o Save on cost to populate operations tools
    ▪ Define and measure standards-based data requirements in project scope
    ▪ Translate to formats needed for operations solutions
    ▪ Populate reduce cost and time to populate operations systems

• Data to data
  o Information is already in a digital format
  o No need to translate or scrape data from P&IDs, lists, reports

• Change management – keep updated as facilities are updated/debottlenecked, etc.
  o Track when changes are implemented
Creating incremental value at every step in the cycle

Drive innovation through operations feedback

Owner’s digital twin: Aggregate and visualize in context (facility/fleet)

Engineering digital twin: Aggregate and visualize in context (facility/fleet/all)

Preconfigured for target systems

Enable digital twin value by optimizing and enhancing operations

What data do I need, in what format in operations??

Simulate, engineer & design

Estimate, plan, procure, construct

Commission

Handover to Operations

Populate/Configure operations systems

Train operations staff

Operations systems configured from engineering data, ease of configuration and consistency

ERP

Operations systems ready to updates following projects, MoC work, Operations Mods

1. Digital project execution: Predictable cost with 15% lower TIC, predictable schedule

2. Digital handover: Progressive handover during project, minimum time to start up/get to production

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

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

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

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

Named as one of the world’s most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. The company is headquartered in Cambridge, UK.

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