

VALUE ANALYSIS & VALUE ENGINEERING

DESIGN WHAT THE CUSTOMER PAYS FOR.

CUSTOMERS PAY ONLY FOR WHAT THEY VALUE.

VAVE is built for professionals who design, develop, source, manufacture or manage products and processes — helping teams identify invisible cost, understand function, challenge unnecessary complexity and convert ideas into approved, measurable value improvements.

THE VAVE ADVANTAGE

Q 01

See invisible cost

Recognise materials, features, processes and complexity that add cost without adding customer value.

≡ 02

Value every function

Compare what each function costs with what it needs to deliver.

ⓘ 03

Challenge the obvious

Question over-design, unnecessary parts, specifications and process steps with evidence.

☐ 04

Create better alternatives

Generate, cost and rank alternative designs, materials, processes and configurations.

👤 05

Learn through application

Expert-led learning, industry cases and a live Action Learning Project.

LEARNING JOURNEY



Expert-led learning & case studies

Build the VAVE mindset through practical concepts and industry examples.



Application on a real workplace problem

Apply function-cost analysis to a live product, process or cost opportunity through an Action Learning Project.



Certificate, peer collaboration & CoP

Build capability through application, peer learning and continued collaboration.

WHO IS THIS FOR?

Design & manufacturing

Identify unnecessary features, materials and manufacturing complexity.

Sourcing, costing & quality

Challenge cost drivers and evaluate value-based alternatives.

Product & operations

Improve product value while protecting required performance and customer needs.

Engineering & R&D

Translate functional requirements into simpler, more cost-effective solutions.

ONE VAVE CAPABILITY. MULTIPLE BUSINESS OUTCOMES.

VAVE can help organisations address product, process and lifecycle challenges involving:

COST

Where can we remove unnecessary cost without compromising required performance?

FUNCTION

What does each component, feature or process actually need to do?

MATERIAL

Can the required function be delivered using less, simpler or lower-cost material?

COMPLEXITY

Which parts, features or process steps can be eliminated, combined or simplified?

QUALITY

Can we achieve the required quality with a simpler and more economical solution?

TIME

How can we reduce manufacturing, assembly, processing or maintenance effort?

LIFECYCLE

Can we reduce the total cost of ownership, maintenance and operation?

One method. Every product or process where cost must earn its place.

FROM FUNCTION TO VALUE IMPROVEMENT

BUSINESS / CUSTOMER NEED

What must the product, process or system achieve?

FUNCTION ANALYSIS

What functions are required — and what does each cost?

COST-VALUE GAP

Where does cost exceed the value delivered?

ALTERNATIVE GENERATION

What else could deliver the same function?

EVALUATION

Which alternative provides the best value?

IMPLEMENTATION

How is the solution approved, implemented and verified?

BUILT TO WIN OVER THE WHOLE COMPANY

A technical advantage

Engineers and cross-functional teams gain a structured capability to analyse functions, challenge cost and develop evidence-based alternatives.

A business advantage

Organisations reduce unnecessary cost, simplify products and processes, improve margins and create a repeatable approach to value improvement.

THE VAVE PROMISE

Better function. Lower unnecessary cost.

Simpler products. Stronger value.

Design for what customers value.

Build value engineering as a capability.

WHERE CAN VALUE ENGINEERING CREATE VALUE?

VAVE can be applied wherever products, processes and systems contain opportunities to improve the relationship between function, cost and customer value. Each opportunity below reads as challenge, VAVE application and potential impact.

01 AEROSPACE

Component & structural design **Fewer parts, lower component cost**

High material cost & complex geometry → Optimise functions, materials & architecture

Manufacturing processes **Lower conversion cost**

High machining content & many operations → Simplify routes, remove operations

Material selection **Material savings & lower weight**

Premium materials & over-specification → Match material to required function

Cabin & interior systems **Lower weight & assembly cost**

Many features, fittings & assemblies → Rationalise functions & interfaces

Maintenance & MRO **Lower lifecycle cost**

High replacement & service costs → Design for serviceability & access

02 PHARMACEUTICALS

Formulation **Lower formulation cost**

Many ingredients & costly raw materials → Analyse functional contribution of inputs

Packaging **Lower packaging cost & waste**

Excess material & multiple components → Separate protection from extras

Drug delivery devices **Lower BOM & assembly cost**

Complex mechanisms, high part count → Evaluate functions, simplify architecture

Manufacturing processes **Faster, cheaper processing**

Many processing & handling steps → Remove non-value-adding steps

Equipment & utilities **Lower operating cost**

High equipment, energy & upkeep cost → Evaluate alternative configurations

03 INFRASTRUCTURE

Structural systems **Lower project cost**

Over-design & high material consumption → Optimise structural functions & materials

Roads & pavements **Lower construction & upkeep cost**

High material & lifecycle costs → Evaluate material & design alternatives

Buildings **Better cost-value balance**

Costly materials, finishes & services → Function-cost analysis of elements

Water & wastewater **Lower CAPEX & OPEX**

High CAPEX, energy & equipment cost → Optimise capacity & equipment selection

Construction methods **Faster execution, lower labour cost**

Labour-intensive processes & rework → Evaluate alternative methods

04 HEALTHCARE

Medical device design **Lower device cost**

High part count & expensive materials → Analyse critical functions, simplify design

Surgical instruments **Lower manufacturing cost**

Premium materials & complex manufacture → Match materials & processes to function

Healthcare consumables **Lower recurring cost**

Recurring material & packaging cost → Remove non-value-adding elements

Diagnostic equipment **Lower ownership cost**

Complex systems & high maintenance → Evaluate architecture & lifecycle functions

Hospital infrastructure **Lower lifecycle cost**

High construction & utility costs → Optimise facility systems around functions

05 AUTOMOBILE**Product & structural design** **Lower BOM & weight**

Material, weight, NVH & cost trade-offs → Optimise design functions & material use

Powertrain & EV systems **Lower system cost**

High-cost components & materials → Challenge architecture & component functions

Interior systems **Lower BOM & complexity**

Feature proliferation & high part count → Separate valued functions from extras

Manufacturing & assembly **Lower conversion cost**

Many operations, fixtures & joining steps → Simplify process & assembly functions

Electrical & electronic systems **Lower component cost**

Growing components, wiring & complexity → Consolidate functions, simplify architecture

06 CHEMICAL INDUSTRIES**Formulation** **Lower formulation cost**

High-cost raw materials & many additives → Evaluate functional contribution

Raw-material selection **Lower input cost**

Premium or over-specified inputs → Match properties to real requirements

Production processes **Lower conversion cost**

Energy-intensive, multi-step processing → Analyse functions, simplify routes

Paint & coating **Lower product cost**

Performance needs drive complex formulations → Optimise around required performance

Packaging **Lower packaging cost & waste**

Multiple formats & excess material → Evaluate protection & handling functions

07 ELECTRONICS / SEMICONDUCTORS**PCB & electronics assemblies** **Lower BOM & assembly cost**

High component count & complex layouts → Analyse functions, consolidate components

Semiconductor packaging **Lower packaging cost**

High-value materials & complex processes → Evaluate alternative architectures

Thermal management **Lower system cost**

Expensive, often over-designed cooling → Match solution to functional need

Enclosures & mechanical parts **Lower material cost**

Complex geometry & high machining content → Optimise material, geometry & route

Testing & inspection **Lower test cost & cycle time**

Extensive testing & long test cycles → Analyse and optimise test requirements

08 TEXTILE / LEATHER**Fabric development** **Lower material cost**

Material, construction & finish drive cost → Optimise material selection & functions

Dyeing & finishing **Lower processing cost**

High water, chemical & energy use → Evaluate functions, optimise parameters

Garment construction **Lower BOM & conversion cost**

Multiple trims, components & operations → Analyse functions, simplify construction

Leather processing **Higher yield, lower material cost**

Yield loss & complex patterns → Optimise material utilisation

Packaging **Lower packaging cost & waste**

Excess packaging & extra accessories → Optimise protection & presentation

WANT TO BUILD VALUE ENGINEERING AS AN ORGANISATIONAL CAPABILITY?

FIND THE COST. UNDERSTAND THE FUNCTION. CREATE THE VALUE.

VAVE · Value Analysis & Value Engineering — built for professionals who design, source, build or manage products and processes.

TO KNOW MORE, CONTACT US

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