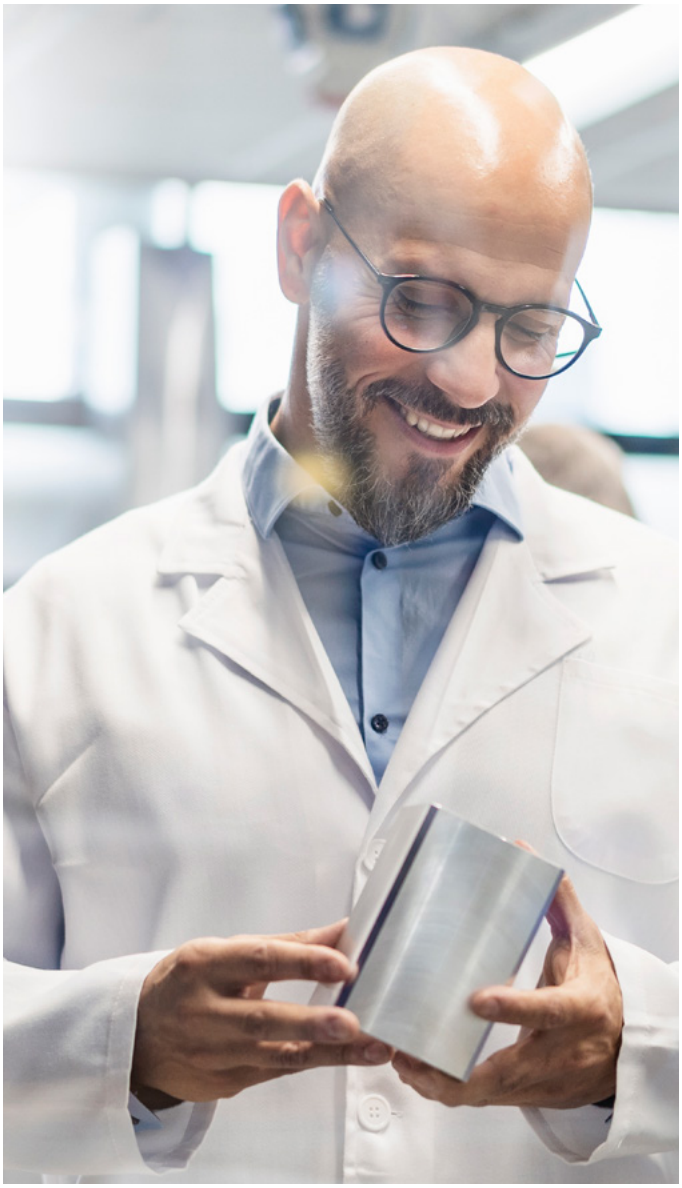
A&M INSIGHTS

Elevate Transformation Success with Value Engineering

Each organisation is different, but companies undergoing transformation programmes are often diagnosed with similar problems. Unique among advisory firms, A&M is able to apply Value Engineering measures in restructuring contexts. A&M practitioners have helped clients improve competitiveness and reduce COGS by between 20% and 30% within a span of 12-24 months using Value Engineering methodologies.



Value Engineering is an additive component of transformation programmes. It provides opportunities for organisations to drive significant incremental efficiencies in traditional transformations. Value Engineering methodologies can be applied to projects as diverse as capacity adjustments, footprint optimisations, labour cost arbitrage and value-to-cost ratio improvements.

The key difference with Value Engineering is the degree of focus on the product specification and design phase. We estimate that up to 80% of COGS is determined here, with incremental improvements having a significant impact on the end value-to-cost ratio. Our view is that this phase has been routinely underleveraged as advisory firms have prioritised organisational transformation and footprint optimisation opportunities. Here, we discuss the ways organisations can complement transformation programmes with Value Engineering best practices, including in restructuring contexts.

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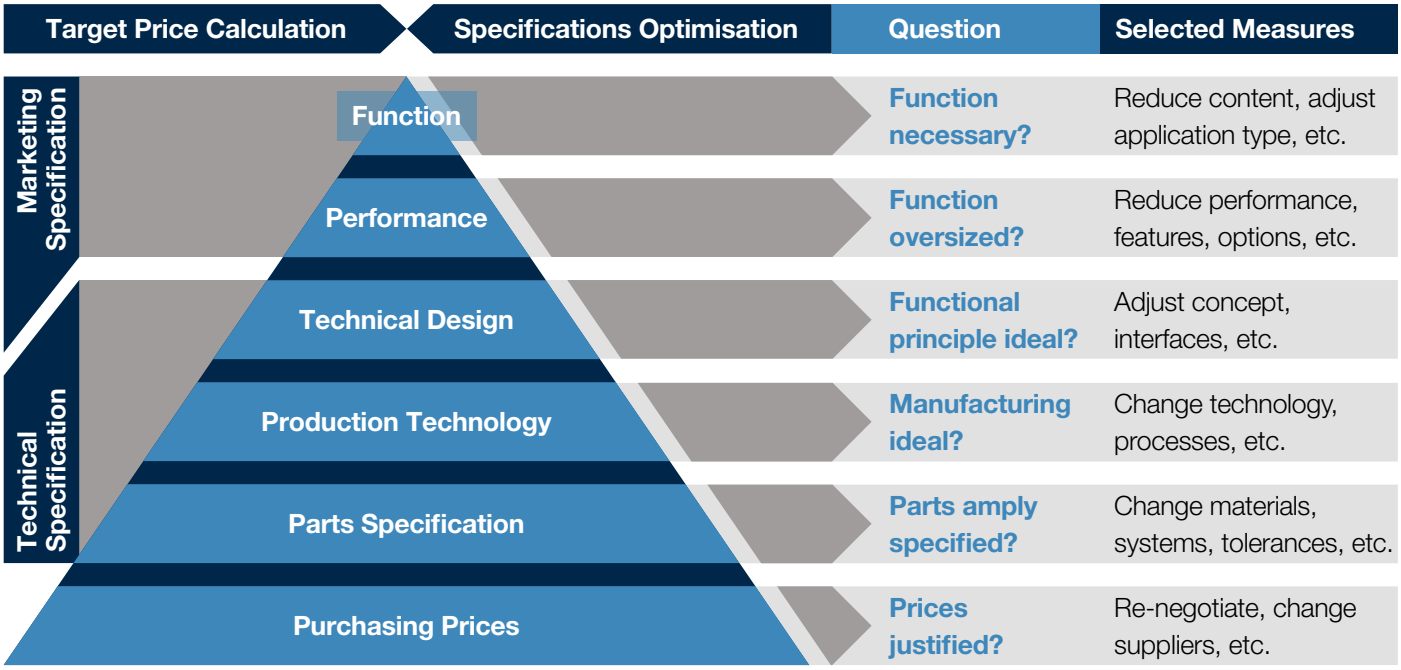
The Value Engineering impact pyramid – six areas to unlock value

The success of a Value Engineering programme depends on delivering cost and value optimisations at the product design and specification phase. In order to achieve holistic cost reductions, a systematic assessment of the product design process is essential.

The impact on cost and competitiveness differs at each level and is dependent on whether the project is a one-off or delivered as part of a recurring transformation initiative. There are six steps to this process.

1. First, we look at whether each product design **function** is required. For one-off projects, e.g. a tailor-made assembly line, only high-value cost reductions are worth chasing. On the other hand, eliminating 'function waste' on an ongoing basis is highly scalable, making savings of cents worth hunting down.
2. Next we come to design **performance** – effectively, iterating the remaining functions to their minimum viable specifications. Once live, a machine's TAKT time should match, not outperform customer requirements. The customer may have also requested output values that can be achieved with lower input specifications.
3. After that, we look at **technical design** to evaluate whether functions have been designed most efficiently. On a one-off basis, an optimised minimal viable design engineered to the customer's requirements might be the solution. For high-volume products, modularisation might be key to handle changing demands.
4. We then look at **production technology** to see if the selected option supports the given function in the best possible way. This could be as simple and fundamental as hydraulic vs. mechanic, or machined vs. casted.
5. In addition to functional analysis, **parts specification** is a major enabler in unlocking value. Using the experience of suppliers in choosing materials, and adapting the design to suppliers' manufacturing capabilities, ensure expectations on cost and quality are aligned.
6. **Purchasing prices** are the final cost reduction lever. A clear understanding of manufacturing cost in various regions (e.g. Western Europe vs. Eastern Europe, China or North America) is essential in order to conduct effective supplier negotiations. This lets teams discuss facts rather than estimates, and to know when a final offer is acceptable.

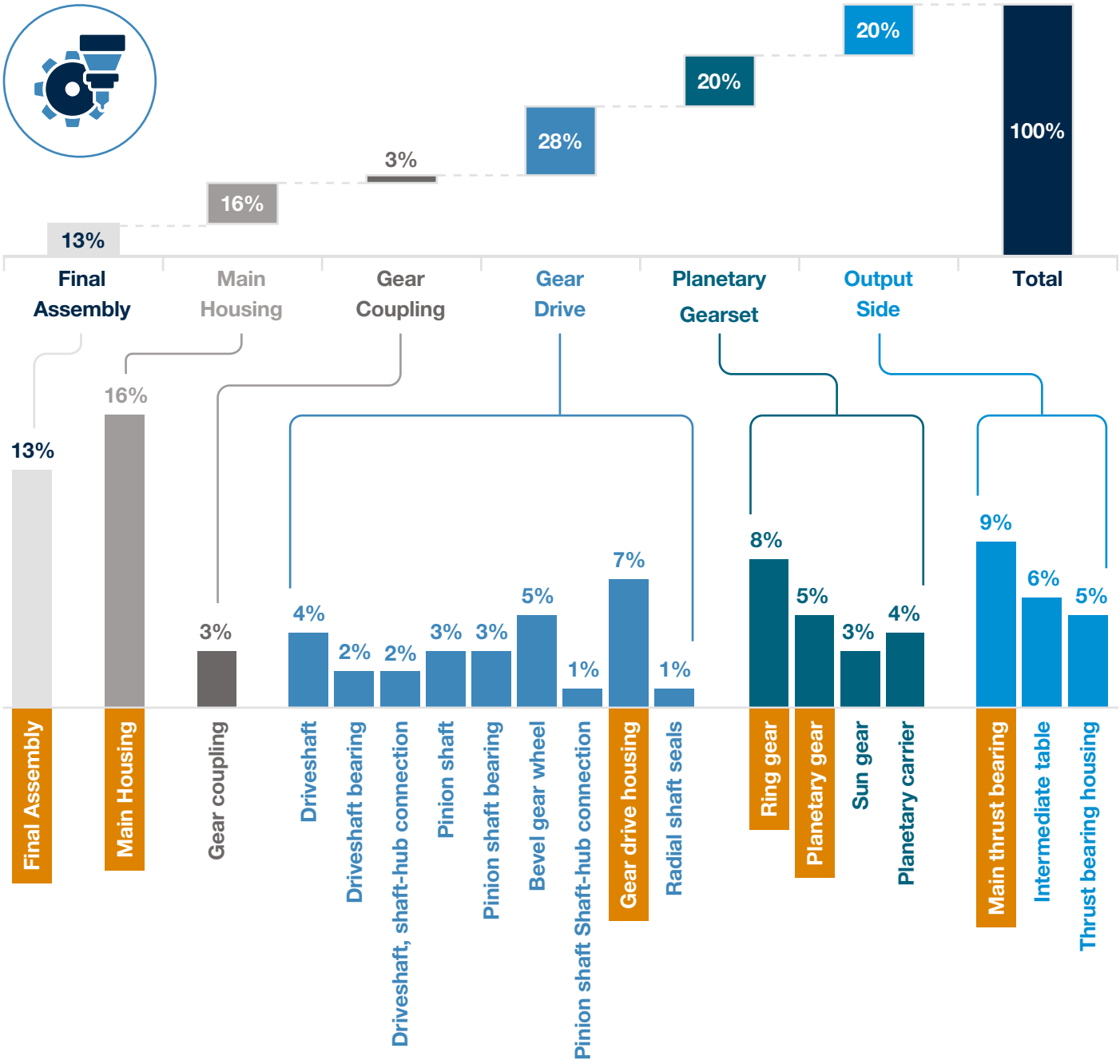


Value Engineering in action: example engineering project

Projects usually start by using a similar initiative from the past as a base design, in order to minimise cycle time and engineering hours. Too often, these designs include specifications that increase costs but which are not needed for the specific scenario. Therefore, when starting a Value Engineering project the first step is to compare specifications and eliminate inefficient components.

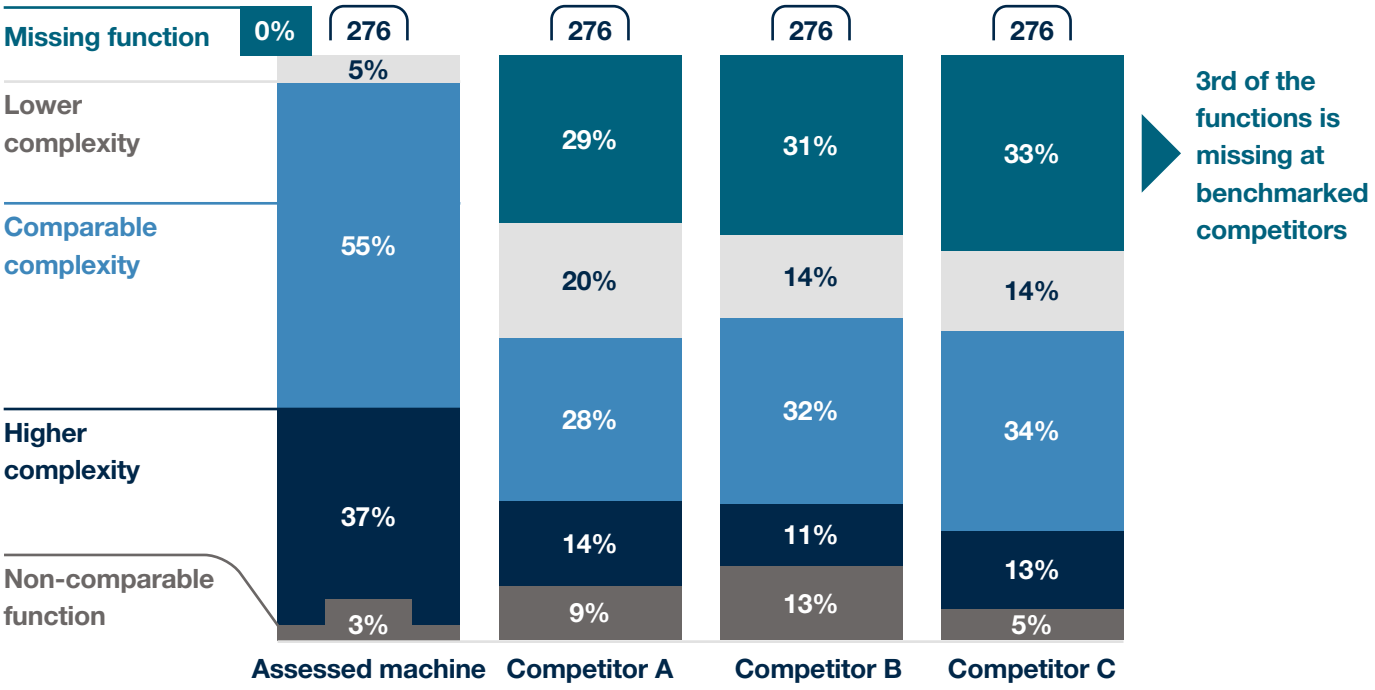
Besides screening specifications, it is important early on to carry out an ABC analysis focusing on high-value components, based on a transparent cost breakdown of a similar machine or piece of equipment.

Cost Breakdown and Cost Drivers of a Mill Gear

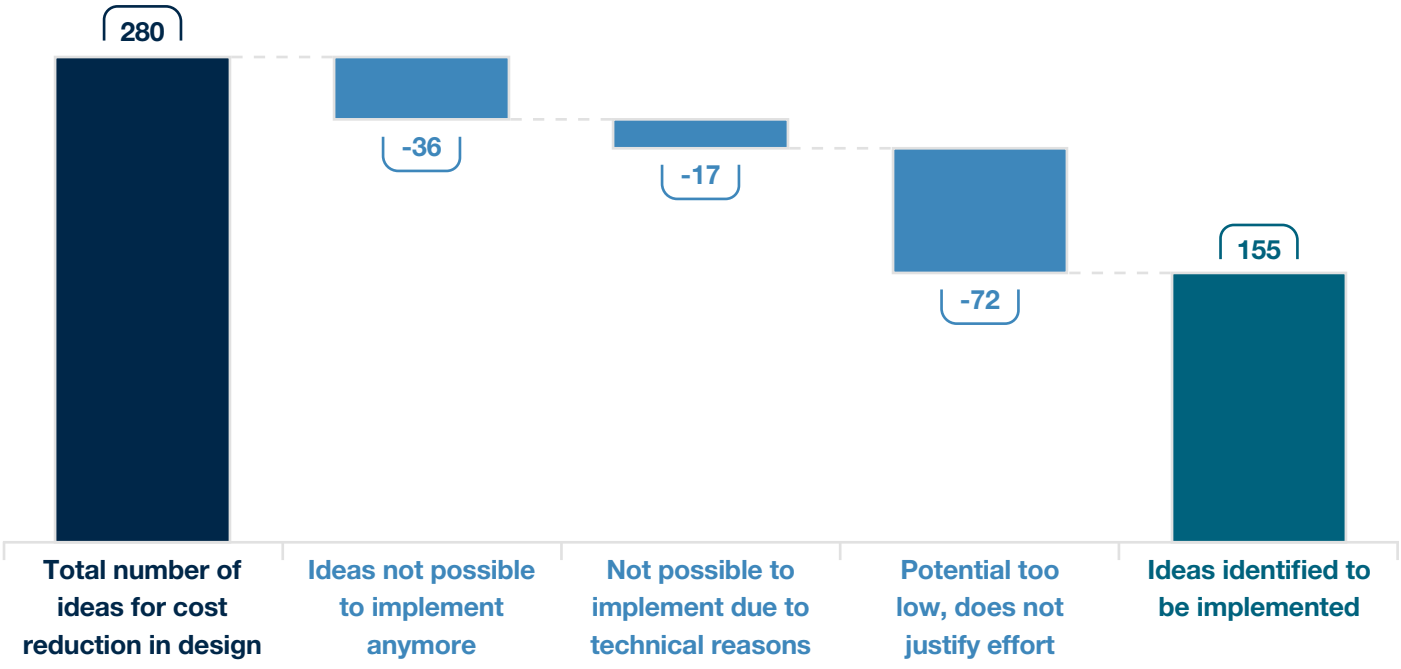


Value Engineering in action: example engineering project

High-cost components are the first targets for cost reductions. Competitor benchmarking and sourcing ideas from client teams, A&M experts and suppliers is essential to achieve consensus on the improvements that can be made. An example graphic here shows the output from a benchmarking exercise that creates opportunities to come up to par with competitors.



Next, the cost, benefit and feasibility of different design alternatives are evaluated, and a final package is decided on. A rationalisation of alternatives takes place, leaving only the feasible improvements:



The potential of interdisciplinary value engineering

Reducing cost in an individual product is one thing, but implementing Value Engineering capabilities in client organisations can deliver outsize added value over the long term.

Many organisations have achieved this, especially in (but not limited to) the automotive sector. A Value Engineering unit's remit is to challenge existing designs and specifications, to provide methodology for in-house competitor benchmarking and target cost modelling, and to set cost targets for engineering and purchasing teams.

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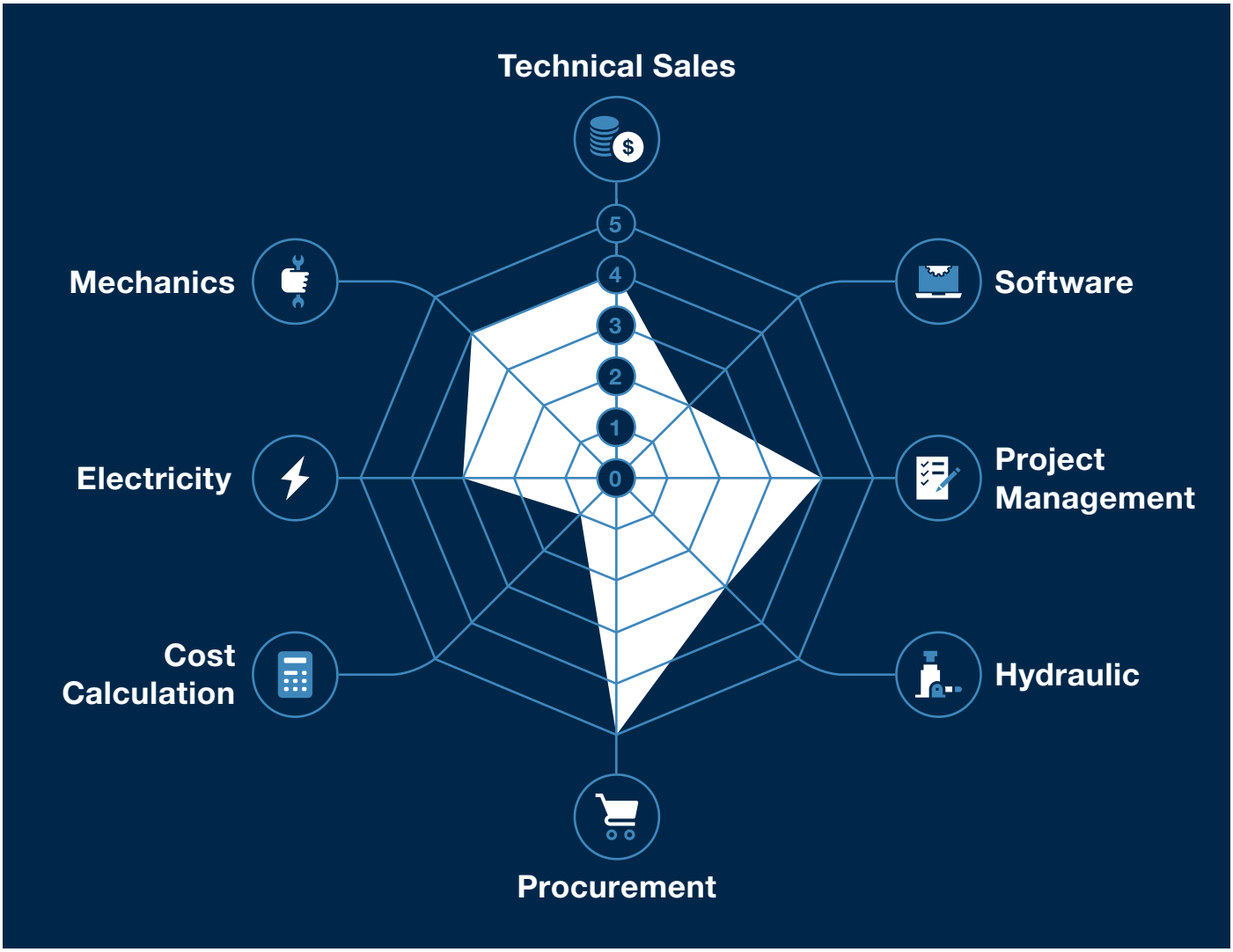
In developing a cost-optimised, sustainable product design based on Value Engineering principles, several competencies are critical. Below is an assessment of an example organisation's potential to implement Value Engineering best practices on an ongoing basis. (Axes might vary depending on the industry and on the nature of the technologies being scoped.) Such an exercise highlights strengths a company should capitalise on, and also identifies areas for improvement.

Example on how an organisation can implement Value Engineering best practices



Results across industries and applications

Our experienced professionals have developed and implemented Value Engineering programmes in different industries and markets. One leading packaging company benefited from COGS reductions of 30%, encompassing improvements to existing product lines and on 'next-gen' products.

Applying Value Engineering to components programmes, we have delivered up to 20% reductions in cost. Looking at processes involving plants and systems, improvements have been even higher, with reductions in costs ranging from 20% to 30%.

Products and Components

Automotive OEM

5% - 8%

Automotive supplier

10% - 20%

Fire protection system

20% - 40%

Turbine blade

10% - 20%

Process valves

10% - 20%

Electrical switchgear

5% - 15%

White goods

2% - 5%

Plants and Systems

Filling lines

15% - 30%

HV gas insulated switchgear

15% - 25%

Generators

15% - 20%

Auxiliary plants

10% - 40%

Warehousing system

10% - 20%

HVAC for shipbuilding

30% - 40%

HVAC for rolling stock

10% - 15%

We have delivered cost reductions of 20-30% with Value Engineering

By driving Value Engineering improvements in the product specification and design phases, we have elevated the success of our clients' broader transformation programmes. A&M delivers results by consistently challenging established thinking and applying best-in-class design solutions, whether on one-off projects or more systemic, scalable improvement programmes. A&M is also able to upskill engineers, procurement and technical sales professionals to incorporate Value Engineering thinking into clients' organisations, delivering added value over the long term.

A&M: Leadership. Action. Results.℠

A&M has decades of experience addressing the most complex industrial transformation projects for organisations around the world. Our unique approach puts senior practitioners close to the action, generating demonstrable improvements for our clients. To speak to us about our experience in restructuring and Value Engineering, please visit our website, or contact the authors below.

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ABOUT ALVAREZ & MARSAL

Companies, investors and government entities around the world turn to Alvarez & Marsal (A&M) when conventional approaches are not enough to make change and achieve results. Privately held since its founding in 1983, A&M is a leading global professional services firm that provides advisory, business performance improvement and turnaround management services.

With over 4500 people across four continents, we deliver tangible results for corporates, boards, private equity firms, law firms and government agencies facing complex challenges. Our senior leaders, and their teams, help organizations transform operations, catapult growth and accelerate results through decisive action. Comprised of experienced operators, world-class consultants, former regulators and industry authorities, A&M leverages its restructuring heritage to turn change into a strategic business asset, manage risk and unlock value at every stage of growth.

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