Optimizing your cost-engineering experience

Cleansheet enables procurement and product development leaders to analyze a product's underlying cost structure to identify efficiency opportunities in purchasing, production, delivery, and design.

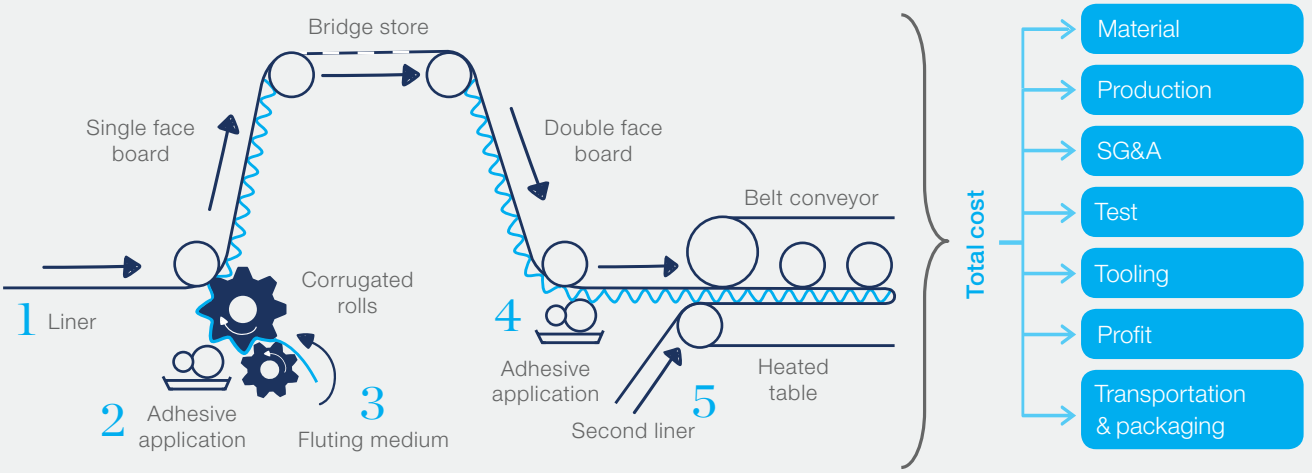
Cleansheet
By McKinsey

What is a Cleansheet?

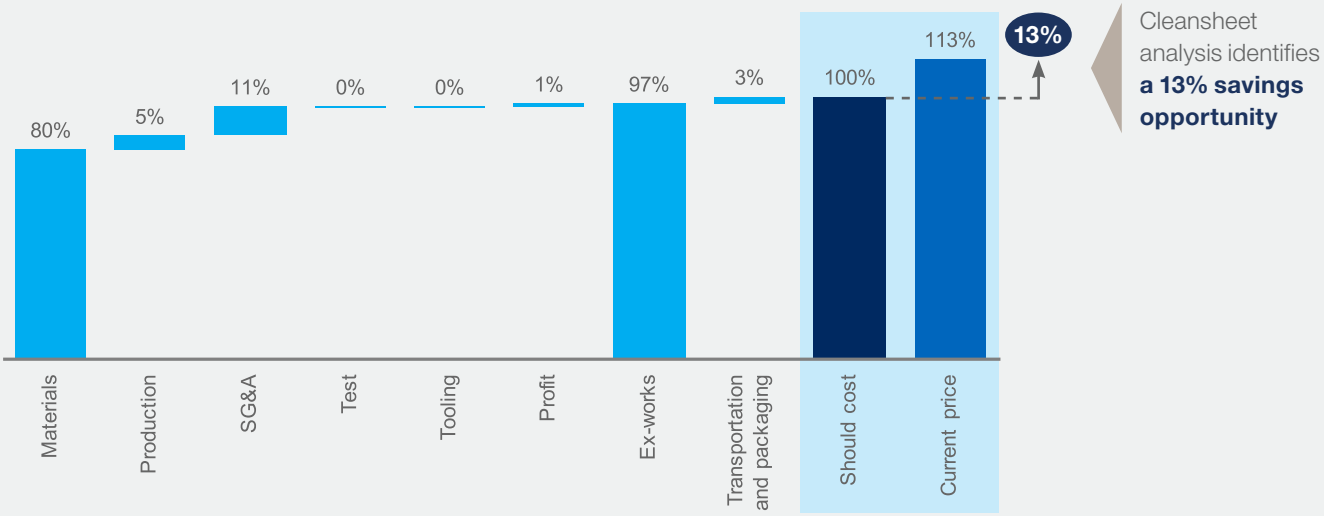
Cleansheets are a means by which to create a bottom-up build of cost and understand what a product or service 'should cost' to make or buy. It translates the real world production process into a value stream model, allowing organizations to pinpoint different steps of the production, procurement, and supply chain process to identify cost savings opportunity at each level.

Illustrative 5-layer carton example

CLEANSHEETS BREAK DOWN THE PRODUCTION PROCESS AND DETERMINE THE COST DRIVERS ASSOCIATED WITH EACH STEP OF THE PROCESS...



...AND COMPARE WHAT ORGANIZATIONS ARE CURRENTLY PAYING TO WHAT THEY SHOULD BE PAYING



Cleansheets enable organizations to:

1. Develop an advantaged fact-base for setting and achieving 'should costs'
2. Understand how changes to cost drivers (e.g., raw materials, currency, etc.) effect should-cost across the portfolio in real time
3. Rapidly evaluate different design by calculating should-costs of different product specifications

The Cleansheet Solution

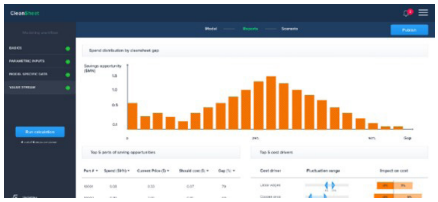
Without visibility into what contributes to each product's manufacturing and delivery costs, it is difficult for companies to identify which parts of their procurement process present cost reduction opportunities. Cleansheet solves this problem by providing a database of input costs, a suite of analytical tools that prioritize cost-saving initiatives across the production process, and a team of experts that analyzes competitor products and facilitates supplier negotiation workshops. By analyzing every aspect of the production process, Cleansheet uncovers exactly which procurement or design changes will result in the greatest savings.

Cleansheet is a collaborative SaaS platform that rapidly determines should-costs for items through an existing library of cost models and custom-model building capabilities. These models are populated by data from curated cost databases, insights from McKinsey's network of category experts, and inputs from supplier workshops to calculate should-cost for specific items and whole portfolios. Cleansheet provides a sustainable solution to managing product costs year over year.

Features

CURATED COST DATABASES

Thousands of dynamic data points for materials, process costs, etc., that re-fresh cost calculations instantaneously



COLLABORATIVE SAAS PLATFORM

Web-based environment enables organization-wide collaboration and a consistent source for all things costing

POWERFUL CALCULATION ENGINE

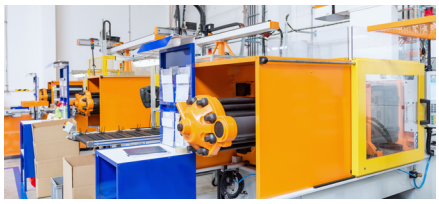
Designed to calculate should-cost for simple items to the most complex assemblies instantaneously

INTUITIVE USER INTERFACE

An Excel-like environment that minimizes learning curve

CUSTOM MODEL DEVELOPMENT

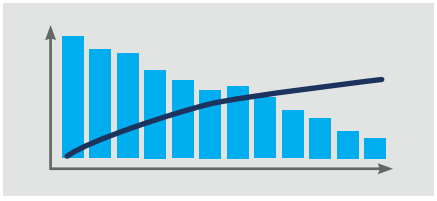
Extensive library of cost models paired with capability to create custom models across spend categories



EXPERT COSTING TOOLS

Easy to use algorithms that determine costs associated with manufacturing processes, labor, and overhead

Advanced Capabilities



PARAMETRIC MODELING

Powerful capability that calculates should-cost of entire categories for complex portfolios based on a few characteristics of each item

CAD-TO-CLEANSHEET

Cutting edge technology that translates 3D part models into production process and automatically calculates manufacturing time, labor needs, and overall costs

Parametric modeling

Bringing cost transparency and analysis to complex portfolios and large supplier bases

What is it?

The Cleansheet Solution offers a parametric capability which uses a flexible model to calculate savings opportunities for entire categories of items (thousands) based on a few parameters such as dimensions, materials, or finishing. The parametric capability can also be used to determine costs of indirect spend such as temporary labor or freight load, as illustrated below. This feature supplements the Cleansheet Solution's ability to conduct complete pricing teardowns for a couple items at a time.

How does it work?

ILLUSTRATIVE PARAMETRIC MODEL FLOW FOR FULL TRUCK LOAD FREIGHT

Model-specific parameters are input into...

... the model building interface and underlying calculation engine...

...which produces the should-cost of all items

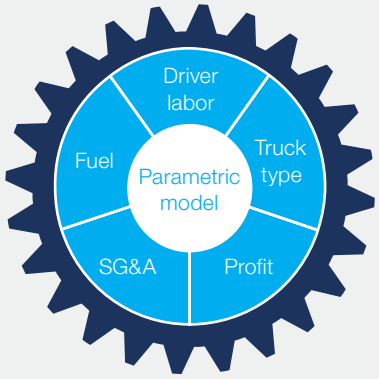
Item definition table

Item	Parameters P1 P2 P3 .....Pm
1	Origin, destination, distance, trip type, team type, truck type, road type...
2	.
3	.
...	.
N	N

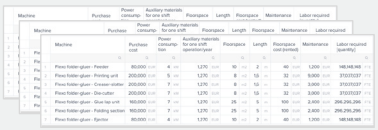
Model input data tables

Examples:

- Truck types for full truck load shipping
- Labor taxes by country/states for temp labor
- Fuel efficiency



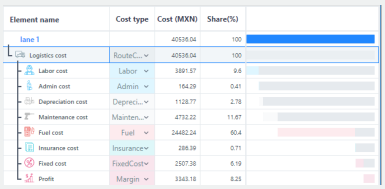
Global input data tables from Solution



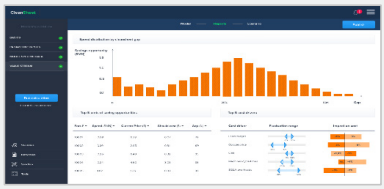
Examples:

- Labor rates by role, industry, country
- Utility rates by country
- Taxes by country
- Raw material prices

Cleansheet output value stream



Cleansheet detailed dashboard



Post-processing analysis

1. Calculates cost target and breakdown for **specific parts** as opposed to "representative" parts
2. Identifies parts with **greatest savings opportunity**
3. Analyzes effects of **parameters sensitive to change,** e.g.,
   - Change in country of manufacturing
   - Labor rate increase/decrease
   - Exchange rate increase/ decrease

What impact does it generate?

- Increases visibility of total spend breakdown and enables higher confidence for supplier negotiations, resulting in higher savings
- Allows procurement to analyze entire portfolios of parts quickly for organizations with complex, fragmented categories and multiple suppliers
- Brings a level of ease and depth of analysis to understanding costs for organizations with large portfolios of items

CAD-to-Cleansheet

Automated CAD-to-Cost speed and power, combined with Cleansheet's proven transparency and flexibility

What is it?

CAD-to-Cleansheet allows users to automatically translate the geometry of a 3D CAD model into a full Cleansheet cost model. Early 3D costing systems forced the user to trade-off speed of the analysis with control of the cost model, transparency, flexibility to cover the total cost of acquisition. McKinsey has specifically designed 3D Costing Module to allow the cost expert to interact with the cost model at any step of the analysis, to understand why decisions were made, modify those decisions, and substitute their own existing cost models if desired.

How does it work?

1. Input 3D model and other info

Input your 3D model for a part or entire assembly. Choose materials, volumes, OLE, OEE, and other starting assumptions

2. Construct process routing

3DCS will construct a full process routing for each part based part geometry and any constraints you apply

3. Calculate physical resources

For each process, 3DCS will calculate the cycle time, set-up time, mass, utilization, etc. physical resources needed

4. Convert to financial resources

Cleansheet will cost all the resources with our industry leading cost databases

5. Analyze, investigate, customize

Understand what causes cost and tailor analysis to your tastes

All calculations and assumptions are fully transparent throughout each step and can be adjusted / overridden based on expert input

What impact does it generate?

- Increases speed of building accurate cost models 10-50x over manual solutions
- Can analyze entire BOM structures, including assembly costs
- Allows procurement to analyze entire portfolios of parts quickly from existing CAD models
- Enables engineering to see the real-time predictive cost impact of design alternative they are considering
- Brings a level of ease and depth of analysis to the costing expert the is impractical without automated CAD analysis

Client impact

Impact:

$60M in savings

for $180M of spend

44% potential savings

during RFQ after Cleansheet

Global industrials client

McKinsey unlocked significant value for a large, global industrials client through a robust parametric cleansheet exercise. This client was sourcing a fragmented portfolio with over 40,000 parts and over 1,000 suppliers. After building bottom-up cleansheets for the client, the team found an average savings gap of 38% but a very wide spread in cost savings (from 2-95%) across the portfolio. Our experts then built parametric cleansheets for 10,000+ parts to determine specific cost targets. The client received a factbase from which to center their cost negotiations moving forward. Through an RFQ process, the client saw 44% potential savings from best bids and ultimately saved $60 million across $180M of spend.

$500M in savings

over 2 years

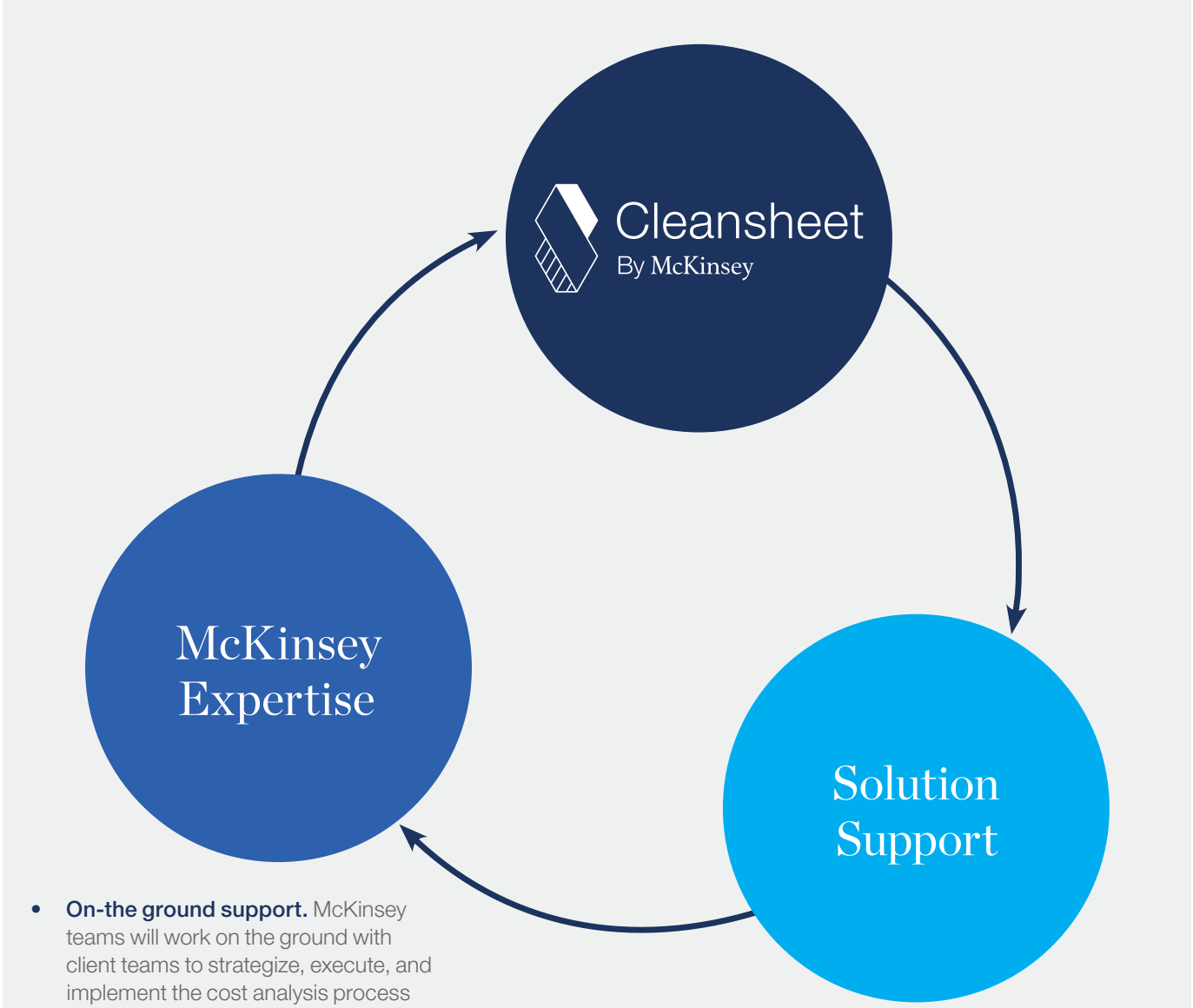
40% average savings

across product categories

US discount retailer

A large US discount retailer (~$70B revenue) with a very complex and fragmented portfolio of products (e.g. over 2000 items in sportswear, 800 items in footwear, etc.) found large cost savings through the Cleansheet solution. While this client already had a robust sourcing process in place, in reality the cost breakdown they had was misleading, as they were not analyzing close to their full spend. With Cleansheet, McKinsey collected product samples for 70-80% (~200 items) of their total spend and mapped costs to a detailed breakdown of the production process. The cleansheet model identified savings gaps of 36% for sportswear and 44% for footwear. After a multi-round RFQ, the client found significant savings of 20% in sportswear and 24% in footwear. Over 2 years, we delivered $500M in savings.

Understanding McKinsey's cost analysis ecosystem



- **On-the ground support.** McKinsey teams will work on the ground with client teams to strategize, execute, and implement the cost analysis process with Cleansheet from end-to-end
- **Supplier prioritization.** Our experts provide knowledge and insight on what the most impactful items and suppliers to negotiate with will be
- **Negotiation strategy.** McKinsey partners with clients to strategize on the best course of action for supplier negotiations

- **Installation.** McKinsey works with users to ensure that client IT systems are set up for successful use of Cleansheet
- **Training.** McKinsey provides a comprehensive onboarding and continued training program for technical use of the tool
- **Model customization.** McKinsey tailors its Cleansheet model offerings to the specific needs of the client, whether a client needs to calculate manufacturing, freight, or temp labor costs

Why use Cleansheet?

INITIAL NEGOTIATIONS

Cleansheet analyzes production processes to tell users what they should be paying for products. With a rigorous breakdown of the financial facts, users can enter cost negotiations armed with a strong arsenal of costing data and achieve greater savings

Case example

$2B impact

Large telecom used Cleansheet across entire spend to manage costs

REACTING TO SHIFTING COSTS

As economics shift and market conditions oscillate, organizations may see changes in their quoted costs by suppliers. Cleansheet's refreshable databases enable users to regularly refresh product cost calculations in the face of changing market costs, to ensure that product costs are reasonably quoted

18% impact

Global elevator manufacturer managed fluctuating input prices by aligning SKUs globally and using Cleansheet to manage prices

DESIGNING NEW PRODUCTS

When organizations think about designing new products or modifying existing products, Cleansheet enables rapid evaluation of the financial and production implications of different design decisions for items. The parametric capability allows for such analysis at the portfolio level, ensuring that no design decision is made in a vacuum

20% impact

North American electronic manufacturer used Cleansheet on all new product introductions starting at the R&D process

How to get started

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General questions / schedule a demo

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More information:

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