THE PURPLE TEAM

BOOK 05

RUBBER, PLASTICS & INDUSTRY OPPORTUNITIES

THE COMPONENT OPPORTUNITY

Understand rubber and plastics markets, find useful applications, and calculate the business case.



DAVID CHAO

President & CEO, COI Rubber

FIRST EDITION / OCTOBER 2026

START HERE

Know the market. Earn the business.

This book connects industry knowledge to practical business development. It begins with sourced U.S. manufacturing figures, explores applications across twelve buyer industries, and shows how to calculate a specific opportunity from actual requirements.

The purpose is to make the scale understandable and the work concrete. An enormous industry creates many possible conversations. A particular customer still needs a relevant capability, a qualified part, acceptable terms, and dependable delivery before business can happen.

Three kinds of numbers in this book

REPORTED DATA: U.S. Census Bureau manufacturing shipments and a separately scoped Plastics Industry Association estimate. Each has a year, definition, and source.

ILLUSTRATIVE ASSUMPTIONS: Invented quantities, prices, award shares, margins, and compensation rates used to teach calculations. They are not COI quotes, typical customer spend, participant results, or forecasts.

YOUR VERIFIED OPPORTUNITY: A customer's actual drawings, volumes, requirements, approved price, award, releases, and payments. This is what eventually supports a business decision.

Publication note

David Chao / The Purple Team. First edition, October 2026. Sources checked October 22, 2026. All monetary figures are U.S. dollars. The statistical core is U.S. domestic manufacturing shipments for 2024, the latest annual AIES figures verified for this edition.

Buyer-industry shipment figures include those industries' full products. They do not measure rubber or plastic purchases. Product-manufacturing totals are also broader than COI's verified capabilities. Geography, scope, and supply-chain overlap matter; do not add unrelated totals together.

Applications are research starting points requiring technical review. This book does not certify a material, establish regulatory compliance, authorize a quotation, or create compensation rights. Actual customer and company agreements govern the work.

YOUR ROUTE THROUGH THIS BOOK

Turn scale into a qualified opportunity.

04 A letter from David

05 **Market facts / The U.S. manufacturing picture**

06 **Rubber / Product categories and dollars**

07 **Plastics / Product categories and dollars**

08 **Buyer industries / What the figures mean**

09 **Components / Learn the questions first**

11 **Industry profiles / Twelve places to investigate**

23 **Opportunity math / Account demand to revenue**

25 **Economics / Margin, cash, and compensation**

29 **Focus / Choose a market you can serve**

30 **Worksheets / Account, economics, and RFQ**

33 **Sources / Market data and industry profiles**

35 **Teaching notes / Read and use the evidence**

Read. Practice. Review. The worksheets are designed to be printed and used more than once.

A LETTER FROM DAVID

Small components can carry important work.

My work in industrial rubber taught me to pay attention to the part inside the larger product. A component may look ordinary on a desk and still matter greatly to the person responsible for an assembly, a machine, or a customer delivery.

That is the opportunity I want this book to help you see. Look for the requirement behind the part. Learn why the customer needs it, how it will be evaluated, and what the supplier must do well. The useful conversation begins there.

The industry figures show that this is a substantial field. They should encourage curiosity and preparation. They should also make us more precise. A national shipment number is not money waiting for a new representative to collect. The path to revenue runs through a particular customer and a particular problem we are qualified to solve.

I want you to become comfortable with both the technical questions and the commercial mathematics. You do not need to become an engineer to ask for the drawing revision, operating environment, quantity, and approval process. You do need to know when an answer belongs with the technical team.

You should also be able to explain the difference between a quoted annual opportunity, an accepted order, collected revenue, gross profit, and your own compensation. Those distinctions protect the quality of the business we build.

Use this book to choose a field worth learning. Start with a manageable number of accounts. Bring accurate information back to the team. Improve your understanding with every conversation.

The ambition is real: develop useful relationships in industries that depend on dependable components. The method is practical: learn the work, qualify the requirement, make the economics clear, and follow through.

> *A large market gives you places to look. A well-understood customer gives you something useful to do.*

REPORTED DATA / U.S. MANUFACTURING

The industry is substantial and diverse.

The U.S. Census Bureau's Annual Integrated Economic Survey, distributed through FRED, reports $287.895 billion of 2024 shipments for plastics and rubber products manufacturing, NAICS 326. The series was updated September 10, 2026. These are nominal shipment values, not company profit or a global market forecast. [M1]

U.S. manufacturing category / 2024	Shipments, $ billions
Plastics products / NAICS 3261	240.560
Rubber products / NAICS 3262	47.335
Plastics and rubber products / NAICS 326	287.895

The two components total the combined category before rounding. Plastics accounts for approximately 83.6% and rubber 16.4% of this reported shipment value. The rubber category includes tire manufacturing and rubber/plastics hoses and belting. It is not all custom molded rubber.

Why you may see a larger plastics number

The Plastics Industry Association's 2026 report describes $533.6 billion in 2025 U.S. plastics-industry shipments, or $715.8 billion when suppliers are included. Its broader definition includes plastics produced inside establishments classified in other industries. This differs in scope and year from NAICS 3261 product manufacturing. Do not add it to the Census figures or treat the difference as growth. [M2]

Use the right question

For understanding the manufacturing categories, use the comparable Census tables. For a particular account, use the customer's relevant part demand. For your sales plan, narrow further to parts the company can qualify, supply competitively, and support.

These figures describe a domestic production-side measure. They are not U.S. apparent consumption: imports, exports, and other adjustments would be needed for that different measure. Supply-chain transactions can also count value at multiple stages.

Sources: [M1] series AIES326RCTUS, AIES3261RCTUS, AIES3262RCTUS; [M2]. Full source routes appear on pages 33-35.

REPORTED DATA / RUBBER

What the $47.335 billion includes

All figures below are U.S. 2024 manufacturing shipments in billions of dollars, rounded to three decimals. These non-overlapping categories sum to the rubber total using the unrounded data. [M1]

NAICS / product-manufacturing category	Shipments, $ billions
326211 / Tires, except retreading	18.938
326212 / Tire retreading	1.557
32622 / Rubber and plastics hoses and belting	6.905
326291 / Rubber products for mechanical use	8.021
326299 / All other rubber products	11.915
3262 / Total rubber product manufacturing	47.335

Read the categories as a map

Mechanical-use products are a useful place to begin researching industrial applications, but even that category is not identical to COI's addressable work. The company must confirm its actual processes, materials, capacity, documentation, and commercial fit for each requirement.

The tire categories total $20.494 billion before rounding. Subtracting those categories leaves $26.841 billion for the listed non-tire rubber categories, including rubber/plastics hoses and belting. This subtraction is a derived figure, not a separate published market estimate. It remains broader than custom components the company may supply.

Avoid a tempting shortcut

"If we captured one percent" is arithmetic, not a sales strategy. A share calculation says nothing about who the buyers are, whether the parts fit, how qualification works, or how long awards take. Build an account-level model before treating a market share as an operating goal.

A useful first assignment is to identify one relevant application, one plausible buyer, and one question that would establish fit. The size of the category supplies context; the answers supply the next step.

Source: [M1]. Series IDs use each displayed NAICS code: AIES + code + RCTUS.

REPORTED DATA / PLASTICS

What the $240.560 billion includes

U.S. 2024 manufacturing shipments, billions of dollars. Category titles are shortened for readability; the source pages contain the full labels. The unrounded categories sum to the total. [M1]

NAICS / product-manufacturing category	Shipments, $ billions
326111 / Bags and pouches	17.022
326112 / Packaging film and sheet	15.851
326113 / Nonpackaging film and sheet	16.825
326121 / Unlaminated profile shapes	6.448
326122 / Pipe and pipe fittings	19.707
32613 / Laminated plate, sheet, and shapes	4.701
32614 / Polystyrene foam products	9.617
32615 / Urethane and other foam products	10.518
32616 / Bottles	16.346
326191 / Plumbing fixtures	5.645
326199 / All other plastics products	117.879
3261 / Total plastics product manufacturing	240.560

Large categories require more investigation

The "all other" category contains many different products. It is not a published total for precision molded components, and it should not be described that way. Similarly, bottles, film, foam, and pipe each involve distinct processes and buying requirements.

Use the table to recognize the breadth of the industry and select questions for research. Verify whether the actual opportunity involves a process and material the company can support. Selling a product family begins with that fit, not the dollar size of the classification.

Source: [M1]. Exact values and series identifiers are included in the package's market-data file. Rounded rows may differ slightly from a displayed total.

REPORTED DATA / BUYER INDUSTRIES

Where component conversations may begin

These are full buyer-industry U.S. 2024 manufacturing shipments. They are not estimates of rubber/plastic component purchases. The rows are not additive: machinery includes several narrower rows, and supply chains overlap. [M1]

Buyer industry / NAICS	Shipments, $ billions
Motor vehicles / 3361	424.662
HVAC and commercial refrigeration / 333415	47.390
Machinery, broad category / 333	473.891
Food product machinery / 333241	7.828
Medical equipment and supplies / 3391	100.444
Computers and electronic products / 334	385.450
Electrical equipment, appliances, components / 335	195.001
Farm machinery and equipment / 333111	39.401
Construction machinery / 33312	43.970
Aerospace products and parts / 3364	246.966
Railroad rolling stock / 3365	14.018
Ship and boat building / 3366	44.928

What is not available in this table

A consistent verified public breakdown of rubber-and-plastic spending by these twelve customer industries was not established for this edition. No such totals are invented here. The profiles instead identify applications and show explicit hypothetical account calculations.

To estimate actual component spend, gather relevant part numbers, annual demand, unit prices, sourcing share, and qualification evidence. Page 23 shows that method. A buyer's total industry revenue is not a substitute for these inputs.

COMPONENT KNOWLEDGE

Learn the requirement before the material.

Rubber and plastics are broad material families. A familiar name does not specify the exact compound, grade, performance, or processing requirements. Material selection depends on the application and belongs with qualified technical personnel.

Recognize the jobs components perform

Sealing helps control the passage of fluids, gases, or contaminants. Isolation and damping address movement or vibration. Protective parts can cover openings or shield an assembly. Plastic structural, guiding, or spacing parts may support a mechanical function. These are application categories to investigate, not promises that one material can do every job.

Component family to investigate	Questions that help technical review
Gaskets and O-rings	What is being sealed, at what conditions, in what geometry?
Boots, bellows, and grommets	What moves, flexes, passes through, or needs protection?
Mounts and bonded assemblies	What load, motion, environment, and attachment apply?
Profiles and extrusions	What cross-section, length, tolerances, and joining method?
Plastic molded or machined parts	What dimensions, loads, finish, and grade are specified?
Foam and die-cut parts	What compression, recovery, thickness, and adhesive needs?

Ask for the actual conditions

Record the minimum and maximum temperature, fluids or chemicals, pressure, motion, dimensions, and required life where relevant. Parker's material-selection tool illustrates how temperature, hardness, polymer group, and fluid compatibility enter a selection process. A generic compatibility statement is not an approved design. [T1]

Ask for the customer's current specification and drawing revision. If the customer wants an alternative, record who can authorize that change and how it will be tested. A seller should not silently substitute a material based on price or appearance.

Use this vocabulary to ask better questions and prepare a clearer handoff. It is not a replacement for engineering, testing, or customer approval.

FROM INTEREST TO AN RFQ

Make the technical handoff useful.

An RFQ, or request for quotation, should give the authorized team enough information to evaluate the requirement and identify what remains unresolved. The goal is a response that matches the customer's actual need.

Gather the core information

Identify the company and application, part number, drawing and revision, specified material or performance requirement, annual demand, first order quantity, release pattern, target timing, and delivery location. Ask about tooling ownership, existing tooling condition, sample needs, inspection evidence, packaging, and approval steps when relevant.

Distinguish the quantities

Annual demand describes a period. A first release describes an initial shipment. An award share describes the portion assigned to a supplier. A minimum order quantity is a commercial or production condition. Confusing these can substantially distort a revenue estimate.

Establish the evidence required

Ask who approves the part, what documents or testing they require, and when they can review them. For regulated or demanding applications, get the exact requirement instead of relying on a general label such as "food grade," "medical," or "aerospace."

Food-contact suitability depends on the applicable regulatory status and conditions of use. Drinking-water requirements may include standards addressing health effects of contact materials. These are application-specific questions; the book does not establish that a component complies. [T2], [T3]

Close the loop with the customer

Summarize what you received, name the missing information, and explain the next review step. Confirm timing with the team before promising it. Keep drawings and commercial details in approved company channels.

A complete handoff can reveal that an opportunity is unsuitable. That is useful information. Finding the mismatch early protects the customer's time and the team's capacity.

The twelve profiles that follow are original research prompts and hypothetical calculations. They do not establish COI capabilities or actual customer demand.

01 / MOTOR VEHICLES

Automotive programs and supplier tiers

REPORTED CONTEXT: $424.662 billion in U.S. 2024 shipments. Motor vehicle manufacturing; this figure excludes separately classified motor-vehicle parts manufacturers. Source: Census AIES via FRED, AIES3361RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Investigate seals, grommets, boots, isolators, and protective or guiding plastic parts in a specific vehicle assembly. Begin with a defined component and a known design owner. An automotive application can sit at an OEM, a supplier tier, or an aftermarket channel; each has a different buying process.

Who buys and what may trigger a review

Identify the purchasing contact, the engineer who controls the requirement, and the quality person who approves the evidence. Ask whether the project is a new platform, a resourcing request, a service replacement, or a cost review. A tier supplier may control the purchase while a customer further up the chain controls the specification. A supplier transition, capacity constraint, recurring defect, or new program can create a conversation. Obtain the release pattern and approval schedule before assuming the annual volume can be supplied immediately.

Questions that qualify the requirement

Which drawing revision and material specification apply? Is the quantity platform demand or the volume actually open to a new supplier? What validation and production-approval documents are required? Who owns the tooling, and what happens when the program ends?

A hypothetical account calculation

Assume 3 parts x 100,000 annual units each x $0.80 per unit x 50% awarded share = $120,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Confirm capability, required quality evidence, capacity, change-control rules, and commercial responsibility. A similar-looking part is not proof that the proposed component is approved.

02 / HVAC & REFRIGERATION

Equipment that seals, isolates, and protects

REPORTED CONTEXT: $47.390 billion in U.S. 2024 shipments. Air-conditioning, refrigeration, and forced-air heating equipment manufacturing; not all building or HVAC service revenue. Source: Census AIES via FRED, AIES333415RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Potential research areas include cabinet seals, grommets, vibration-control parts, drain-related components, and plastic covers or spacers. Start with the equipment model and the function of the part. A part exposed only to an enclosure environment differs from one contacting a working fluid.

Who buys and what may trigger a review

Look for equipment manufacturers, component assemblers, or authorized replacement-part channels. Purchasing may manage the quote while engineering and quality determine whether the part can enter production. Ask who owns a design change and who handles service requirements. A new equipment model, supplier consolidation, recurring leakage, vibration complaint, or assembly problem can justify a review. Document the actual issue before suggesting a material or geometry change.

Questions that qualify the requirement

What temperature range and environmental exposure apply? Does the part contact refrigerant, oil, water, or cleaning chemicals? What noise, movement, sealing, or fit requirement matters? Are demand and releases seasonal? What samples or tests establish acceptance?

A hypothetical account calculation

Assume 4 parts x 25,000 annual units each x $2.00 per unit x 50% awarded share = $100,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Confirm the applicable material and performance requirements, production timing, and evidence the customer needs. Do not infer compatibility from the general category HVAC.

03 / INDUSTRIAL MACHINERY

Many machines, many small requirements

REPORTED CONTEXT: $473.891 billion in U.S. 2024 shipments. Broad machinery manufacturing. Includes HVAC, food machinery, farm equipment, and construction machinery shown separately in other profiles. Source: Census AIES via FRED, AIES333RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Investigate seals, wipers, protective boots, mounting elements, guides, and other components in a named machine or subsystem. Broad machinery is a starting category; narrow it to a function and a buyer with a repeatable requirement.

Who buys and what may trigger a review

Possible contacts include machine builders, subsystem manufacturers, maintenance organizations, and industrial distributors. Determine whether the buyer controls an original design, purchases to a fixed specification, or needs an approved replacement. A maintenance need and an OEM production program require different estimates. Machine downtime, a discontinued part, long lead time, or a redesign may create interest. Ask for the business consequence of the issue and the technical evidence needed to evaluate an alternative.

Questions that qualify the requirement

Is the application static or moving? What pressure, speed, load, temperature, and media are relevant? Does the customer have a drawing or only a worn sample? What inspection and fit checks are required? Is demand recurring or a single repair event?

A hypothetical account calculation

Assume 6 parts x 12,000 annual units each x $3.00 per unit x 50% awarded share = $108,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

A worn sample may not reveal the original dimensions, material, or tolerances. Route reverse-engineering and substitution questions to the technical team. Clarify ownership and permission before using customer designs.

04 / FOOD PRODUCT MACHINERY

Start with the contact and cleaning conditions

REPORTED CONTEXT: $7.828 billion in U.S. 2024 shipments. Food product machinery manufacturing. It is not the size of the food-and-beverage industry or its total component purchases. Source: Census AIES via FRED, AIES333241RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Research seals, gaskets, diaphragms, protective parts, and plastic guides in a specific processing machine. Distinguish direct food contact from non-contact equipment functions. A component may also face cleaning, sanitizing, heat, pressure, or repeated disassembly.

Who buys and what may trigger a review

Start with machinery OEMs, system integrators, and the appropriate maintenance or engineering contacts at a processor. Identify who approves contact materials and who controls cleaning procedures. Purchasing alone may not have the conditions needed for a technical evaluation. A new line, repeated seal replacement, a cleaning-process change, or supplier unavailability may create a need. Record the conditions in detail rather than requesting a generic food-grade compound.

Questions that qualify the requirement

What food and cleaning substances contact the part? At what temperature and duration? Which authorization, specification, and documentation apply? Is the part reusable, and how is it cleaned? What traceability or change notification does the customer require?

A hypothetical account calculation

Assume 5 parts x 6,000 annual units each x $4.00 per unit x 50% awarded share = $60,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Qualified personnel must evaluate the material and intended conditions of use. FDA food-contact resources help identify the regulatory questions; this profile does not establish compliance or approve a product. [T2]

05 / MEDICAL EQUIPMENT

Understand the application and approval burden

REPORTED CONTEXT: $100.444 billion in U.S. 2024 shipments. Medical equipment and supplies manufacturing, including many different products. It does not measure medical polymer-component demand. Source: Census AIES via FRED, AIES3391RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Potential investigations include equipment feet, protective covers, gaskets, and specified molded parts. Begin by distinguishing an external equipment accessory from a component that contacts a patient, fluid path, or sterile environment. The required evidence can differ substantially.

Who buys and what may trigger a review

Identify the device or equipment manufacturer, design owner, and supplier-quality contact. Ask who decides material requirements and how a new supplier is qualified. A distributor may know purchasing demand without controlling the design or approval. A redesign, new equipment program, supply continuity issue, or documented quality concern can prompt evaluation. Qualification costs and timing must be understood before treating the apparent volume as available revenue.

Questions that qualify the requirement

What is the intended use and contact category? Are sterilization, cleaning, traceability, or cleanliness requirements specified? Which exact tests and documents are required? Who approves a change in material, process, or manufacturing location?

A hypothetical account calculation

Assume 4 parts x 50,000 annual units each x $0.90 per unit x 40% awarded share = $72,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Do not claim medical suitability, biocompatibility, or regulatory approval from a generic material name. Confirm the actual application and required evidence with the customer and qualified technical personnel.

06 / ELECTRONICS

Protect the assembly and control the details

REPORTED CONTEXT: $385.450 billion in U.S. 2024 shipments. Computer and electronic product manufacturing, a broad category covering many assemblies and technologies. Source: Census AIES via FRED, AIES334RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Research enclosure seals, cable grommets, protective boots, feet, spacers, and other specified molded parts. Some applications also involve electrical, thermal, or shielding requirements. Treat those as separate technical requirements rather than assuming that any rubber or plastic component provides them.

Who buys and what may trigger a review

Look for equipment OEMs, contract manufacturers, and subsystem suppliers. Determine whether the purchasing organization owns the drawing or builds to another company's specification. Clarify which party can approve alternatives and which party will issue the order. A product redesign, enclosure change, assembly yield issue, or second-source program can create a discussion. Ask whether the apparent cost problem is actually caused by scrap, handling, or poor fit.

Questions that qualify the requirement

What dimensions and tolerance stack matter at assembly? What environmental protection is required? Are flammability, electrical, outgassing, cosmetic, or cleanliness requirements specified? What changes need customer approval? Is forecast volume backed by releases?

A hypothetical account calculation

Assume 3 parts x 80,000 annual units each x $0.60 per unit x 50% awarded share = $72,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Verify the exact performance and documentation requirements. A proposed material or part should be evaluated in the intended assembly. Prototype acceptance alone does not establish a production award.

07 / ELECTRICAL EQUIPMENT

Find the enclosure and equipment requirements

REPORTED CONTEXT: $195.001 billion in U.S. 2024 shipments. Electrical equipment, appliance, and component manufacturing. The figure is broader than energy equipment and excludes electricity-sales revenue. Source: Census AIES via FRED, AIES335RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Potential research includes cabinet gaskets, cable-entry parts, vibration-control components, appliance seals, and specified plastic covers or supports. Choose a product family and identify how the part affects assembly, protection, or service.

Who buys and what may trigger a review

Target relevant equipment manufacturers, panel builders, and component suppliers. Determine who owns the enclosure or assembly specification and who approves supplier changes. A purchaser may need coordination with engineering, quality, and the final equipment owner. A new cabinet design, field ingress problem, supplier transition, or assembly simplification may justify a review. Ask for the documented problem and evaluation criteria before proposing a solution.

Questions that qualify the requirement

Is the equipment indoors or outdoors? What temperature, moisture, chemicals, and movement are expected? Which electrical, flame, enclosure, or dimensional requirements apply? What marking and traceability are needed? Who verifies the completed assembly?

A hypothetical account calculation

Assume 4 parts x 20,000 annual units each x $2.50 per unit x 50% awarded share = $100,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Do not promise an enclosure rating or equipment approval based only on a component. Verify the part requirement, testing responsibility, and company capability. The whole assembly may determine performance.

08 / FARM EQUIPMENT

Ask how the part works in the field

REPORTED CONTEXT: $39.401 billion in U.S. 2024 shipments. Farm machinery and equipment manufacturing; not total agricultural production or farm spending. Source: Census AIES via FRED, AIES333111RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Research protective boots, grommets, mounts, wipers, seals, and specified plastic parts in a named machine. Exposure may involve dirt, weather, fluids, movement, and repeated use. The relevant conditions depend on the exact location and function.

Who buys and what may trigger a review

Possible buyers include equipment OEMs, implement manufacturers, subsystem suppliers, and established replacement-part channels. Clarify whether the need is for current production, an older installed base, or a limited maintenance order. A field failure pattern, limited availability, model update, or supplier issue may open a discussion. A visible sample is useful for discussion but does not by itself establish the original specification.

Questions that qualify the requirement

Which machine models and part revisions are involved? What field conditions and maintenance practices affect the part? How seasonal are orders? Which dimensions and material requirements are controlled? What evidence is needed for an alternate source?

A hypothetical account calculation

Assume 5 parts x 15,000 annual units each x $2.00 per unit x 40% awarded share = $60,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Check application fit, approved material, dimensional control, replacement compatibility, and actual demand. Separate an installed-machine count from the number of parts the customer expects to buy during the year.

09 / CONSTRUCTION MACHINERY

Connect the part to a demanding duty cycle

REPORTED CONTEXT: $43.970 billion in U.S. 2024 shipments. Construction machinery manufacturing; not the value of construction projects or all equipment rental activity. Source: Census AIES via FRED, AIES33312RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Potential investigations include boots, wipers, seals, mounts, bumpers, and protective plastic parts. A component may operate around shock, dirt, motion, fluids, or weather, but the actual duty cycle must come from the customer.

Who buys and what may trigger a review

Identify machinery OEMs, attachment manufacturers, hydraulic or other subsystem suppliers, and relevant service channels. Find the design owner and determine whether a new source can be qualified under the current specification. Recurring replacement, a changed attachment, long lead time, or a supplier capacity issue can create interest. Ask how the customer will distinguish a useful improvement from an unsupported material substitution.

Questions that qualify the requirement

What loads, movements, pressures, temperatures, and media apply? Is damage caused by wear, installation, contamination, or another condition? What life and inspection requirements are specified? Does the estimate cover production units or service demand?

A hypothetical account calculation

Assume 5 parts x 10,000 annual units each x $3.50 per unit x 40% awarded share = $70,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Confirm the application and evidence needed for safe use. Sales should record technical questions and obtain an authorized response. High consequence of failure can change the qualification and commercial burden.

10 / AEROSPACE

Qualification is part of the opportunity

REPORTED CONTEXT: $246.966 billion in U.S. 2024 shipments. Aerospace product and parts manufacturing. Includes much more than polymer components and is not an accessible-sales estimate. Source: Census AIES via FRED, AIES3364RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Investigate a specifically controlled seal, grommet, protective component, or molded part only after the company confirms relevant capability. Different locations in an aircraft or aerospace system can have very different criticality and approval requirements.

Who buys and what may trigger a review

Identify the approved purchasing channel, design authority, and supplier-quality organization. Determine whether the opportunity is a new design, a source change, production work, or an authorized replacement. The person requesting a price may not control approval. A qualified second-source project, obsolescence issue, or new controlled requirement may justify investigation. A potentially attractive price does not remove the work of approval and documentation.

Questions that qualify the requirement

Which exact specification, revision, traceability, and test requirements apply? What supplier approvals are mandatory? Are material and process changes restricted? Who can authorize the proposed source? What information-sharing or contractual restrictions must be reviewed?

A hypothetical account calculation

Assume 8 parts x 2,000 annual units each x $12.00 per unit x 25% awarded share = $48,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Confirm all applicable customer, quality, contractual, and technical requirements before quoting or accepting work. No aerospace certification, export authorization, or approved-source status is asserted by this profile.

11 / RAIL EQUIPMENT

Learn the maintenance and replacement cycle

REPORTED CONTEXT: $14.018 billion in U.S. 2024 shipments. Railroad rolling stock manufacturing. It does not represent total railway operating revenue or all rail maintenance spending. Source: Census AIES via FRED, AIES3365RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Research seals, grommets, isolation elements, protective parts, and specified profiles in a defined rail vehicle or subsystem. Identify whether the part belongs to a safety-related assembly, passenger environment, or other equipment location.

Who buys and what may trigger a review

Potential contacts include rolling-stock manufacturers, subsystem suppliers, and authorized maintenance organizations. Determine the design authority, approved-part process, and who purchases for the installed fleet. An overhaul program, obsolete supplier, repeated service issue, or new vehicle project may create a requirement. Replacement demand should be tied to a verified maintenance plan rather than a simple fleet-size multiplication.

Questions that qualify the requirement

Which vehicle or subsystem uses the part? What qualification, fire-performance, dimensional, and traceability requirements apply? Is demand tied to new builds or an overhaul schedule? Who approves replacement equivalence? What records must accompany a shipment?

A hypothetical account calculation

Assume 6 parts x 3,000 annual units each x $10.00 per unit x 30% awarded share = $54,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Confirm the specification and approval path before promising interchangeability or life. Service environments and consequences of failure can differ by component; route those distinctions to technical review.

12 / SHIP & BOAT BUILDING

Distinguish the vessel, system, and exposure

REPORTED CONTEXT: $44.928 billion in U.S. 2024 shipments. Ship and boat building. Includes distinct commercial, defense, and recreational activity; it is not a marine-component market total. Source: Census AIES via FRED, AIES3366RCTUS. This is the buyer industry's total output, not its rubber or plastics spend.

Where to investigate

Investigate gaskets, protective parts, mounts, grommets, and specified plastic components in a particular vessel system. A cabin fitting, an engine-area component, and a part exposed to water or fuel have different requirements.

Who buys and what may trigger a review

Look for boat or ship builders, system suppliers, repair organizations, and authorized replacement channels. Determine who controls the drawing and whether project approval involves the vessel owner or another authority. A new vessel program, refit, discontinued part, or documented service problem can justify a discussion. Project timing may be uneven, so distinguish a one-time build package from repeat annual demand.

Questions that qualify the requirement

What water, fuel, oil, cleaning chemicals, temperature, and movement are involved? Which location and service life are specified? What approval and documentation are required? Is the demand for a new build, refit, or spare-parts program?

A hypothetical account calculation

Assume 5 parts x 4,000 annual units each x $6.00 per unit x 40% awarded share = $48,000 annual run-rate revenue. Every input is invented for practice. No actual customer demand, quote, award, or expected earnings is implied.

Before promising anything

Verify the operating conditions and applicable approval route. Do not infer resistance to an exposure from the word marine. Confirm the exact material, part, and intended use with the responsible technical team.

OPPORTUNITY MATH / ACCOUNT LEVEL

Calculate the part demand you can serve.

Start from a named customer and relevant parts. For each part, calculate annual demand multiplied by the share awarded to your company and the approved unit price. Sum the parts only after checking that each belongs to the same period and is not counted elsewhere.

A complete hypothetical example

An invented account has three applicable part numbers. Each uses 100,000 units a year. Assume an award of 50% of each part's demand at $0.80 per unit. Potential annual run-rate revenue is 3 x 100,000 x 50% x $0.80 = $120,000.

This is a scenario, not an order. It assumes all three parts qualify, the stated demand occurs, the price holds, and the customer actually awards half the volume. Tooling, freight, taxes, credits, and other charges are excluded from this simplified calculation.

Separate the run rate from the first year

If production begins halfway through the year and demand is evenly distributed with no ramp, the same assumptions would produce $60,000 during that first year. If the ramp is slower or releases are reduced, the result falls further. Use the customer's actual schedule rather than automatically multiplying the first order by twelve.

Narrow the market in steps

Market context describes a broad industry. Relevant applications identify a possible need. Qualified account demand identifies parts you may be able to supply. Awarded demand identifies a customer decision. Released orders and shipments identify actual execution. Collections identify money received.

The percentage of a national market is rarely the most useful early input. A list of qualified part opportunities with evidence behind the quantities is far more actionable.

> *Show the multiplication, the source of each input, and the condition that must be true for the result to occur.*

ILLUSTRATIVE ASSUMPTIONS / TWELVE EXAMPLES

What one account might look like

Every input below is invented for teaching. These are not industry averages, typical account sizes, price quotes, sales forecasts, or participant earnings. A "part" is a distinct part number; demand is annual units per part.

Profile	Parts x demand x price x share	Annual revenue scenario
Automotive	3 x 100,000 x $0.80 x 50%	$120,000
HVAC	4 x 25,000 x $2.00 x 50%	$100,000
Machinery	6 x 12,000 x $3.00 x 50%	$108,000
Food machinery	5 x 6,000 x $4.00 x 50%	$60,000
Medical	4 x 50,000 x $0.90 x 40%	$72,000
Electronics	3 x 80,000 x $0.60 x 50%	$72,000
Electrical	4 x 20,000 x $2.50 x 50%	$100,000
Agriculture	5 x 15,000 x $2.00 x 40%	$60,000
Construction	5 x 10,000 x $3.50 x 40%	$70,000
Aerospace	8 x 2,000 x $12.00 x 25%	$48,000
Rail	6 x 3,000 x $10.00 x 30%	$54,000
Marine	5 x 4,000 x $6.00 x 40%	$48,000

Change the assumptions before believing the result

For the HVAC example, a 25% award share instead of 50% reduces annual revenue from $100,000 to $50,000. A 20% volume reduction at the original share reduces it to $80,000. If both occur, revenue is $40,000. These changes illustrate sensitivity, not their likelihood.

Do not present the combined rows as a sales pipeline. They are twelve independent learning exercises, with no named prospects, validated demand, awarded business, or evidence that all could be served together.

ECONOMICS / GROSS PROFIT

Revenue must carry the cost of delivery.

Gross profit is revenue less the cost of goods sold under the company's accounting policy. Gross margin is gross profit divided by revenue. Operating expenses, financing, taxes, and other items still affect the final result. Company gross profit is not the representative's compensation.

A simplified hypothetical order

Assume 20,000 units at $2.50 each: revenue is $50,000. Assume the direct costs below are classified as cost of goods sold for this exercise. Real accounting classifications and quotations may differ.

Order economics	Amount
Revenue: 20,000 x $2.50	$50,000
Manufacturing or purchase cost	$32,000
Included freight and handling	$3,000
Included inspection and packaging	$2,000
Total assumed cost of goods sold	$37,000
Gross profit	$13,000
Gross margin: $13,000 / $50,000	26.0%

Watch the effect of a discount

If the unit price falls 10% to $2.25 while the assumed costs stay fixed, revenue becomes $45,000 and gross profit $8,000. Gross margin becomes 17.8%. A 10% price reduction has reduced gross profit by 38.5% in this example.

The conclusion depends on the assumptions. Actual costs can change with quantity, timing, quality, freight, and product mix. A seller should ask the authorized team to evaluate a pricing change before offering it.

Tooling, samples, qualification, scrap, rework, returns, warranty exposure, and commercial terms can change the business case. Record the relevant items explicitly. A part with an attractive unit price can still be a poor opportunity if the total obligation is misunderstood.

ECONOMICS / CASH TIMING

Profit on paper does not pay today's bill.

Cash flow depends on when money is paid and received. A company can have a profitable order and still need cash to fund materials, production, freight, or other obligations before the customer pays.

A simplified working-capital timeline

Assume a fictional order will generate $50,000 of receipts and requires $37,000 of costs. The example ignores other transactions, overhead, taxes, borrowing costs, and any starting cash.

Timing	Cash movement	Cumulative project cash
Day 0 / deposit to supplier	-$10,000	-$10,000
Day 30 / remaining project costs	-$27,000	-$37,000
Day 75 / customer payment received	+$50,000	+$13,000

The project requires $37,000 of funding before collection in this scenario. The ending $13,000 matches the simplified gross profit only because the example excludes other items and assumes all revenue is collected and all listed costs are paid.

Ask about the real timing

Who pays for tooling, and when? Are deposits required? What are the supplier's terms and the customer's terms? What determines acceptance? What happens if a release is delayed, a shipment is disputed, or a customer pays late?

A longer payment delay increases the time money is tied up. A canceled order or uncollectible balance can change the result itself. Credit approval and collection responsibilities belong with the authorized company team.

Keep your own plan separate

Do not plan personal spending from the order value or the expected project surplus. Your compensation may depend on eligibility, collection, adjustments, and payment timing in a written agreement. Book 4 explains why irregular income needs its own reserve and review process.

ECONOMICS / PIPELINE

A funnel is a planning model, not a promise.

Start with a small set of stages whose definitions the team agrees on. For example: researched account, relevant conversation, qualified RFQ accepted for review, quote, award, shipment, and collection. A contact list alone does not describe the value or readiness of the pipeline.

A hypothetical planning model

Assume 100 researched accounts produce 30 relevant conversations. Those produce 12 qualified RFQs, which produce 6 quotes and 2 awards. If each awarded account reaches $60,000 of annual revenue, the combined annual run rate would be $120,000.

Every conversion count and revenue amount here is invented. There is no evidence these are typical COI or industry results. Actual outcomes may be zero, and awards may take longer than the planning period. The model is useful only as a way to identify assumptions to test.

A weighted opportunity is still uncertain

Suppose an opportunity has a $100,000 annual run rate and you assign a 20% win probability for planning. Its weighted value is $20,000. That does not mean an expected $20,000 order will arrive. The actual outcome could be no award, a different volume, or an award with a later start.

Use probability estimates only when their purpose and basis are clear. Update them with evidence such as technical fit, decision timing, competition, and customer feedback. Do not convert enthusiasm into precision by adding a percentage.

Inspect the bottleneck

If conversations are relevant but RFQs remain incomplete, improve discovery and documentation. If quotes repeatedly lose on timing, investigate lead-time fit. If awarded work does not collect as planned, involve the responsible commercial team. The next action depends on where the process is failing.

Measure the actual stages over time. A useful model becomes more informed as verified results replace invented assumptions.

ECONOMICS / PERSONAL COMPENSATION

Explain what the earnings number means.

Revenue is the company's sales amount. Gross profit deducts the relevant cost of goods sold. Personal compensation depends on the current agreement. These numbers should never be presented as interchangeable.

A sensitivity exercise, not a compensation plan

The table shows simple multiplication of an assumed eligible collected-revenue base by an invented rate. These rates are not COI rates or an offer. The table does not establish eligibility, expenses, adjustments, taxes, or payment timing.

Assumed eligible collected revenue	At 1%	At 2%	At 3%
$0	$0	$0	$0
$50,000	$500	$1,000	$1,500
$150,000	$1,500	$3,000	$4,500
$300,000	$3,000	$6,000	$9,000

For example, $150,000 multiplied by 2% is $3,000 before any applicable personal expenses and taxes. It is not $150,000 of personal income. If the eligible base is zero, the result in this model is zero regardless of activity or recruiting.

Read the actual agreement

Confirm what qualifies, which base and rate apply, how account eligibility is determined, what adjustments can occur, and when payment is due. Some arrangements use a different basis entirely. Only the authorized current written terms determine the real calculation.

Make a responsible recruiting explanation

You can show how arithmetic works without claiming that people will achieve the assumed revenue. Do not use market totals, selected success stories, or hypothetical percentages as evidence of typical participant earnings. Recruiting someone by itself does not create a customer sale.

The opportunity is to perform valuable work. Whether that work produces compensation, and how much, depends on actual results and the governing terms.

CHOOSE YOUR FOCUS

Pick a field you can learn and serve.

Start with a combination of application relevance, access to buyers, technical fit, and company capacity. The largest buyer industry is not automatically the best first market. A smaller reachable opportunity may provide a better learning path.

Score the evidence, not the excitement

Use a simple 1-to-3 scale for each factor: 1 means weak or unknown, 2 means partially supported, and 3 means supported by specific evidence. Treat the score as a discussion tool, not an automatic approval.

Factor	Evidence to seek
Application fit	Requirement matches a verified company capability.
Buyer access	A relevant contact and understood decision process.
Qualification path	Required documents, tests, owners, and timing are known.
Commercial fit	Plausible volume, terms, logistics, and economics.
Capacity to serve	Team can support samples, production, and follow-through.

Begin with a focused account set

Choose a manageable number of prospects in one or two related applications. Research what they make, why the component may matter, and which role would evaluate a new source. Prepare one question that could confirm or disprove your hypothesis.

After the first conversations, revise the focus. If the requirement is consistently outside capability, change the target. If the buyers have relevant needs but need better information, improve the preparation. Record the reason for the change so the team learns from it.

Make the next 30 days useful

Week 1: learn one profile and verify capability boundaries. Week 2: build account briefs. Week 3: conduct approved conversations and document what is learned. Week 4: review qualified requirements and choose the next focus.

Your first deliverable is a better understanding of actual customer needs. Business follows only when fit, approval, terms, and execution come together.

WORKSHEET / ACCOUNT OPPORTUNITY

Make the application specific.

Use approved systems for live customer information. This worksheet can be completed with a fictional account during training.

Industry, account, application, and likely buyer role

Which component problem might matter, and what evidence supports that?

Which company capability has been verified as relevant?

What drawing, specification, quantity, or approval information is missing?

What is the next useful question, who owns it, and when is it due?

- [ ] I have separated a market statistic from this account's part demand.
- [ ] I have not represented an unverified capability as confirmed.
- [ ] I know how to route technical and commercial questions.

WORKSHEET / OPPORTUNITY ECONOMICS

Show the inputs behind the result.

Use consistent units and a defined period. Label assumptions until the customer or authorized company team verifies them. Do not record private compensation terms in a public training copy.

Calculation input	Value / evidence
Distinct relevant part numbers	_____
Annual demand for each part	_____
Assumed or awarded supplier share	_____
Unit price and approval status	_____
Annual run rate: sum of quantity x share x price	_____
First-year start date and ramp adjustment	_____
Costs, tooling, freight, and qualification	_____
Collection terms and funding requirements	_____

Which assumption has the largest effect on the result?

What evidence would cause you to reduce the estimate or stop?

Which decision requires company authorization?

Keep revenue, gross profit, cash flow, and personal compensation in separate calculations.

WORKSHEET / RFQ READINESS

Prepare a handoff the team can use.

Customer / application: _____ Part / revision: _____

- ☐ Drawing and revision received, or missing information identified.
- ☐ Material or performance requirement recorded accurately.
- ☐ Operating environment and relevant conditions recorded.
- ☐ Annual demand separated from first release and order minimums.
- ☐ Tooling, samples, testing, and approval process discussed.
- ☐ Timing, delivery location, packaging, and documentation identified.
- ☐ Commercial or account-eligibility questions routed appropriately.
- ☐ Customer information stored and shared through approved channels.

What must be resolved before the team can evaluate the request?

Who owns the technical, quality, and commercial decisions?

What next action was agreed with the customer?

A checked box means information has been obtained or clearly identified as missing. It does not certify the design, approve the supplier, or authorize a quotation.

SOURCE REGISTER / PRODUCT MARKETS

Comparable manufacturing figures

[M1] U.S. Census Bureau / AIES via FRED

All Census figures in this book are 2024 annual manufacturing shipments, not seasonally adjusted, reported in thousands of U.S. dollars. Divide by 1,000,000 to express the source values in billions. The cited series show a September 10, 2026 update; values may be revised later.

Open a series at https://fred.stlouisfed.org/series/ followed by its exact identifier below. The digital edition links each identifier. The package includes the unrounded figures and full URLs in market_data.csv.

Category	FRED series identifier
Combined plastics and rubber	AIES326RCTUS
Plastics products	AIES3261RCTUS
Rubber products	AIES3262RCTUS
Tires, except retreading	AIES326211RCTUS
Tire retreading	AIES326212RCTUS
Hoses and belting	AIES32622RCTUS
Rubber for mechanical use	AIES326291RCTUS
All other rubber products	AIES326299RCTUS
Bags / packaging film / nonpackaging film	AIES326111RCTUS / AIES326112RCTUS / AIES326113RCTUS
Profile shapes / pipe and fittings	AIES326121RCTUS / AIES326122RCTUS
Laminated shapes / polystyrene foam	AIES32613RCTUS / AIES32614RCTUS
Other foam / bottles	AIES32615RCTUS / AIES32616RCTUS
Plumbing fixtures / other plastics	AIES326191RCTUS / AIES326199RCTUS

The data describe establishments classified by industry. They do not identify every part's end use or the portion that COI could serve. Product-category examples and opportunity methods in this book are editorial teaching material.

SOURCE REGISTER / BUYER INDUSTRIES

The source behind each profile's figure

The same Census AIES basis applies: U.S. 2024 annual manufacturing shipments, source units in thousands of dollars. Each figure covers the entire stated industry, not its polymer-component purchasing budget. Full URLs and values also appear in market_data.csv.

Profile / industry	FRED series identifier
01 / Motor vehicles	AIES3361RCTUS
02 / HVAC and commercial refrigeration	AIES333415RCTUS
03 / Machinery	AIES333RCTUS
04 / Food product machinery	AIES333241RCTUS
05 / Medical equipment and supplies	AIES3391RCTUS
06 / Computers and electronic products	AIES334RCTUS
07 / Electrical equipment and appliances	AIES335RCTUS
08 / Farm machinery and equipment	AIES333111RCTUS
09 / Construction machinery	AIES33312RCTUS
10 / Aerospace products and parts	AIES3364RCTUS
11 / Railroad rolling stock	AIES3365RCTUS
12 / Ship and boat building	AIES3366RCTUS

[M2] Plastics Industry Association

2026 Size and Impact Report, executive summary, published September 2026. Reports 2025 shipments of $533.6 billion for its plastics-industry definition and $715.8 billion including suppliers. These are contextual figures and are not combined with [M1].
https://www.plasticsindustry.org/wp-content/uploads/2026/09/Size-Impact-Executive-Summary-2026.pdf

Calculations and precision

Shares, non-tire totals, and scenario results are calculations by this book's author from the stated inputs. Displayed figures are rounded; use the unrounded data for reconciliation. No global market total or global forecast is asserted in this edition.

TEACHING & TECHNICAL SOURCES

Use the evidence without overextending it.

[T1] Parker / O-Ring Selector

Shows application inputs such as temperature, polymer group, hardness, and fluid compatibility. This supports asking for operating conditions; it does not approve a specific material in this book.
https://discover.parker.com/ORingSelector_en

[T2] U.S. Food and Drug Administration

Packaging & Food Contact Substances. Links to regulatory status, authorizations, and conditions of use. Determine the exact requirements with qualified personnel.
https://www.fda.gov/food/food-ingredients-packaging/packaging-food-contact-substances-fcs

[T3] NSF / Drinking-water components

NSF/ANSI 61: Drinking Water System Components - Health Effects. Background on the scope of health-effects requirements; the linked educational page is not a certification of any product described here.
https://www.nsf.org/knowledge-library/nsf-ansi-standard-61-drinking-water-system-components-health-effects

[T4] Trelleborg / Industry application context

Industry overview illustrating that engineered polymer solutions serve multiple industrial sectors. The twelve profile exercises are independently written research prompts, not copied catalogs or claims of COI supply capability.
https://www.trelleborg.com/en/seals/your-industry

A 45-minute practice session

Spend 10 minutes distinguishing reported data from assumptions. Spend 10 minutes choosing a profile and drafting discovery questions. Spend 15 minutes recalculating a scenario after reducing volume or award share. Spend 10 minutes presenting the result with its limitations and next verification step.

The instructor should ask: "What would we need to learn before calling this a real opportunity?" A strong answer identifies customer demand, technical fit, approval requirements, commercial terms, and the difference between company revenue and personal compensation.

THE PURPLE TEAM

LEARN THE INDUSTRY. QUALIFY THE NEED. BUILD THE BUSINESS.

Rubber and plastics support a wide range of products and equipment. Use sourced market context, thoughtful application questions, and transparent economics to find opportunities the team can responsibly pursue.

THE SIX-BOOK COLLECTION

01 Sell With Purpose

02 Build a Business That Works

03 Build a Life You Believe In

04 Money With Purpose

05 The Component Opportunity

06 Build the Team. Carry the Mission.

DAVID CHAO

COI Rubber | coirubber.com

Industry knowledge / Twelve profiles / Revenue and profit calculations