



VARZA SCHOOL · THE FOUNDATIONAL 100

Keeping the Right Stock: Demand, Reorder Point, Safety Stock, and Economic Order Quantity

Chapter 58 · Track 6 — Purchasing, Suppliers, Inventory, and Assets

THE QUESTION IT ANSWERS

How can a business balance product availability with cash, storage, expiry, obsolescence, and supply uncertainty?

CONCEPTS DEFINED

Demand · Reorder point · Safety stock · Economic order quantity · Inventory · Working capital · Inventory obsolescence · Capacity

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Varza promise: clear enough for a first-time learner, exact enough for a professional conversation, and practical enough to support a real decision.

Why this chapter matters

This track follows resources from supplier selection to purchase, receipt, storage, consumption, and long-term use. The central discipline is custody: knowing what was ordered, what arrived, what is owned, what it cost, where it is, and whether it can still create value.

Central question: How can a business balance product availability with cash, storage, expiry, obsolescence, and supply uncertainty?

Inventory planning is a service-and-risk decision. Reorder point protects demand during lead time; safety stock absorbs uncertainty; order quantity balances replenishment and holding economics; all three require item-level demand, lead-time, criticality, and constraint evidence.

Varza approaches the subject from life to ledger and from ledger to decision. We begin with what actually happened, identify the rights, obligations, resources, timing, and uncertainty, and only then choose the correct term, calculation, document, or account. This order protects the learner from a common error: learning a label without understanding the economic reality that the label is supposed to describe.

Learning outcomes

- Define and distinguish demand in plain and professional language.
- Define and distinguish reorder point in plain and professional language.
- Define and distinguish safety stock in plain and professional language.
- Define and distinguish economic order quantity in plain and professional language.
- Apply the concepts to a numerical case and explain the result rather than only calculate it.
- Identify evidence, workflow, controls, and Varza entities required for reliable use.
- Recognize when jurisdiction-specific or licensed professional advice is required.

The Varza mental model

A financial concept becomes decision-ready when six questions have answers: **what, who, when, how much, based on what evidence**, and **under which assumption or rule**. A seventh question—**what should happen next**—turns knowledge into management.

This chapter uses internationally recognized terminology, but it remains jurisdiction-neutral unless explicitly stated. Accounting standards, tax rules, contract law, consumer protection, labor requirements, and investment regulation can produce different legal outcomes in different countries. The global foundation gives the learner a stable map; local collections must add the binding rules.

Core concepts

1. Demand

Working definition. Demand is the quantity customers are willing and able to purchase under specified price, time, market, and service conditions.

Forecast demand by SKU, location, channel, and horizon where decisions require it. Historical sales can understate demand when stockouts prevented sales. The number alone is not enough; its definition determines whether comparisons are valid.

Simple example. Recorded sales of zero during a stockout do not prove customer demand was zero.

Decision test. Which document or observation would allow another person to verify it? A reliable answer should state the unit, date or period, scope, evidence, and uncertainty. When one of these is missing, the concept may still be useful for discussion, but it is not yet decision-ready information.

2. Reorder point

Working definition. Reorder point is the inventory position at which replenishment should be initiated to cover expected demand during lead time and an intended protection level.

Reorder logic needs demand distribution, lead-time variability, review frequency, open orders, and service target—not only an average. This is where operational activity and financial reporting meet.

Simple example. Expected lead-time demand of 400 units plus 100 units safety stock gives a 500-unit reorder point.

Decision test. How would a different assumption change the result? A reliable answer should state the unit, date or period, scope, evidence, and uncertainty. When one of these is missing, the concept may still be useful for discussion, but it is not yet decision-ready information.

3. Safety stock

Working definition. Safety stock is inventory held to protect service against uncertainty in demand, replenishment, supply quality, or timing.

Safety stock is paid resilience. Set it according to consequence and variability, then review when conditions change. In Varza language, the concept becomes useful when it changes a decision.

Simple example. A critical spare part carries extra stock because shortage would stop production.

Decision test. Who can influence the result, and who only reports it? A reliable answer should state the unit, date or period, scope, evidence, and uncertainty. When one of these is missing, the concept may still be useful for discussion, but it is not yet decision-ready information.

4. Economic order quantity

Working definition. Economic order quantity is a classical model estimating an order size that balances ordering and holding costs under simplifying assumptions.

EOQ is a starting model. Capacity, discounts, perishability, cash, minimum quantities, uncertainty, and supplier risk may dominate the formula. The professional term matters because it prevents two different realities from being recorded as though they were the same.

Simple example. Higher order cost encourages larger orders while higher holding cost encourages smaller orders.

Decision test. Does the item affect cash now, later, or not at all? A reliable answer should state the unit, date or period, scope, evidence, and uncertainty. When one of these is missing, the concept may still be useful for discussion, but it is not yet decision-ready information.

5. Inventory

Working definition. Inventory is assets held for sale, in production for sale, or in the form of materials or supplies to be consumed in production or service delivery under the applicable framework.

Inventory combines quantity, ownership, condition, location, cost, and expected recoverability. Physical presence alone does not prove ownership. A non-specialist can understand this by separating the object, the timing, and the consequence.

Simple example. Goods held on consignment may be physically present but owned by another party.

Decision test. What is being measured, and what has been left outside the boundary? A reliable answer should state the unit, date or period, scope, evidence, and uncertainty. When one of these is missing, the concept may still be useful for discussion, but it is not yet decision-ready information.

6. Working capital

Working definition. Working capital is the short-term resources and obligations used to sustain ordinary operations, often analyzed through current assets, current liabilities, and the cash conversion cycle.

A growing business can consume cash as receivables and inventory grow faster than supplier credit. Working capital is therefore an operating design issue, not only a ratio. The concept should be measured at the smallest level that still supports a real action.

Simple example. A profitable distributor requires additional cash when sales growth increases inventory and customer credit.

Decision test. When did the underlying right, obligation, benefit, or sacrifice arise? A reliable answer should state the unit, date or period, scope, evidence, and uncertainty. When one of these is missing, the concept may still be useful for discussion, but it is not yet decision-ready information.

7. Inventory obsolescence

Working definition. Inventory obsolescence is loss of inventory usefulness or recoverable value because of technological, market, legal, design, condition, or demand change.

Slow movement is evidence, not the definition. Estimate net realizable value and develop disposition, write-down, or prevention actions. The number alone is not enough; its definition determines whether

comparisons are valid.

Simple example. An old electronic component remains physically perfect but can no longer be sold at its recorded cost.

Decision test. Which document or observation would allow another person to verify it? A reliable answer should state the unit, date or period, scope, evidence, and uncertainty. When one of these is missing, the concept may still be useful for discussion, but it is not yet decision-ready information.

8. Capacity

Working definition. Capacity is the maximum or practical volume of work a resource system can deliver over a period under stated constraints.

Capacity is multidimensional: time, skill, equipment, space, supply, and coordination can each become the binding constraint. This is where operational activity and financial reporting meet.

Simple example. A clinic has doctor capacity for 160 appointments but room capacity for only 140.

Decision test. How would a different assumption change the result? A reliable answer should state the unit, date or period, scope, evidence, and uncertainty. When one of these is missing, the concept may still be useful for discussion, but it is not yet decision-ready information.

How the concepts connect

The concepts in this chapter are a system, not a vocabulary list. Demand, Reorder point, Safety stock, Economic order quantity, Inventory, Working capital, Inventory obsolescence, and Capacity describe different parts of the same decision. Confusing them usually creates one of three failures: the wrong amount is measured, the right amount is assigned to the wrong period or person, or a correct report is used for a decision it was never designed to support.

A useful analysis therefore preserves both **classification** and **relationship**. Classification tells us what an item is. Relationship tells us what caused it, what it affects, and what could change it. Varza should store both. A report that shows only totals may be suitable for orientation; a controlled decision requires traceability to the underlying relationships.

Formulas and quantitative relationships

Reorder point

$$\text{Reorder point} = \text{Expected demand during replenishment lead time} + \text{Safety stock}$$

The point signals when inventory position should trigger replenishment.

Boundary: Use inventory position, not only physical on-hand; account for open supply, reservations, backorders, review interval, and variability.

Classical EOQ

$$EOQ = \sqrt{(2 \times \text{Annual demand} \times \text{Order cost} \div \text{Annual holding cost per unit})}$$

The classical model balances ordering and holding cost under simplifying assumptions.

Boundary: It assumes stable demand and lead time, no shortages, immediate replenishment, and compatible cost behavior; real constraints may dominate.

Worked case — A reorder rule with uncertainty

A spare part has average demand of 20 units per day, supplier lead time of 10 days, chosen safety stock of 80 units, annual demand 7,300, order cost CU 100, and annual holding cost CU 25 per unit.

Item	Amount or observation
Lead-time demand	$20 \times 10 = 200$ units
Safety stock	80 units
Reorder point	280 units
Classical EOQ	$\sqrt{(2 \times 7,300 \times 100 \div 25)}$
EOQ result	approximately 242 units

Calculation and reasoning

1. Trigger replenishment when inventory position reaches approximately 280 units under the stated rule.
2. Classical EOQ is about 242 units.
3. Check supplier minimum order, shelf life, storage, cash, and whether a 242-unit receipt creates excessive cover.
4. Back-test the safety stock against actual demand and lead-time variability and the cost of downtime.

What the result means

The formulas provide a starting policy, not an autopilot. Criticality and real constraints determine whether the calculated order is operationally acceptable.

The case is deliberately compact. In practice, Varza would preserve the supporting documents, currency, dates, counterparty, project or cost center, approvals, and links to the resulting records. The lesson is not merely to reach a number; it is to make the path to that number reviewable.

Practical workflow

1. **Define the decision, responsible person, economic unit, period, and acceptable uncertainty.**
Define the owner, required evidence, status, date, and exception route. Do not allow the next step to erase the record of the previous one.
2. **Clean demand history for stockouts, promotions, one-time orders, and substitutions.** Define the owner, required evidence, status, date, and exception route. Do not allow the next step to erase the record of the previous one.
3. **Measure supplier lead time and variability by item and route.** Define the owner, required evidence, status, date, and exception route. Do not allow the next step to erase the record of the previous one.
4. **Set service consequence, safety stock, reorder point, and order constraints.** Define the owner, required evidence, status, date, and exception route. Do not allow the next step to erase the record of the previous one.
5. **Monitor forecast error, stockouts, excess, expiry, and working-capital effect and revise rules.**
Define the owner, required evidence, status, date, and exception route. Do not allow the next step to erase the record of the previous one.
6. **Reconcile the result to source evidence and investigate exceptions rather than forcing agreement.** Define the owner, required evidence, status, date, and exception route. Do not allow the next step to erase the record of the previous one.
7. **Approve the decision or record at the authority level required by value, risk, and legal consequence.** Define the owner, required evidence, status, date, and exception route. Do not allow the next step to erase the record of the previous one.
8. **Monitor the outcome, compare it with the original assumption, and retain the learning for the next cycle.** Define the owner, required evidence, status, date, and exception route. Do not allow the next step to erase the record of the previous one.

How this concept should appear in Varza

The minimum Varza data model for this chapter includes `item`, `demand_history`, `forecast`, `lead_time`, `inventory_position`, `safety_stock`, `reorder_rule`, `purchase_order`, `service_level`, `stockout`. These names are not merely interface labels. Each entity should have a stable identifier, status history, responsible owner, applicable currency or unit, effective dates, evidence links, and access controls.

A useful Varza screen should answer four questions without forcing the user to reconstruct the story manually:

1. **What happened or is expected to happen?** Show the operational event, obligation, or decision in plain language.
2. **What changed financially?** Show cash, asset, liability, equity, income, expense, commitment, or risk effects.

3. **Why should the user trust it?** Show source documents, calculations, approvals, and revision history.
4. **What requires attention now?** Show exceptions, due dates, thresholds, and the next responsible action.

The Varza design principles most relevant here are:

- Use automation to strengthen evidence and consistency, never to remove accountability.
- Turn information into a decision, a control, or a question; otherwise it is only decoration.
- Begin with the real event, not the accounting label.

Varza AI may explain, classify, compare, simulate, and prepare a proposed action. It should not silently change a legal record, post a material transaction, close a period, release a payment, or make an investment decision on the user's behalf. Material actions require visible evidence, permissions, validation rules, and an accountable human approval path.

Controls and professional boundaries

1. **No automated reorder from unreviewed abnormal history.** The control should be proportionate to value and risk, documented clearly, and tested often enough to detect failure before the consequence becomes irreversible.
2. **Limits for excess cover, expiry, and obsolete stock.** The control should be proportionate to value and risk, documented clearly, and tested often enough to detect failure before the consequence becomes irreversible.
3. **Supplier lead-time performance measured from order to usable receipt.** The control should be proportionate to value and risk, documented clearly, and tested often enough to detect failure before the consequence becomes irreversible.
4. **Stable definitions, versioned assumptions, and consistent units across plans, records, and reports.** The control should be proportionate to value and risk, documented clearly, and tested often enough to detect failure before the consequence becomes irreversible.
5. **Traceability from every material total to evidence, calculation, owner, and change history.** The control should be proportionate to value and risk, documented clearly, and tested often enough to detect failure before the consequence becomes irreversible.
6. **Access and approval rights aligned with responsibility and the possible consequence of error or misuse.** The control should be proportionate to value and risk, documented clearly, and tested often enough to detect failure before the consequence becomes irreversible.

A control is effective only when it operates in practice. A policy that everyone can bypass is a statement of hope, not a control. Likewise, a control that blocks ordinary work without distinguishing low-risk and high-risk cases encourages hidden workarounds.

Common mistakes and better responses

Mistake 1: Using sales during stockout as true demand

Better response. Reconstruct the underlying event, state the definition being used, obtain the missing evidence, and recalculate before making a decision. Correct the process as well as the current number so the same error does not become routine.

Mistake 2: Applying one safety-stock percentage to every item

Better response. Reconstruct the underlying event, state the definition being used, obtain the missing evidence, and recalculate before making a decision. Correct the process as well as the current number so the same error does not become routine.

Mistake 3: Ordering EOQ despite expiry, minimum cash, or storage limits

Better response. Reconstruct the underlying event, state the definition being used, obtain the missing evidence, and recalculate before making a decision. Correct the process as well as the current number so the same error does not become routine.

Mistake 4: Reducing stock without considering supplier variability and shortage consequence

Better response. Reconstruct the underlying event, state the definition being used, obtain the missing evidence, and recalculate before making a decision. Correct the process as well as the current number so the same error does not become routine.

Mistake 5: Using a technically correct number outside the period, entity, currency, or decision boundary for which it was calculated

Better response. Reconstruct the underlying event, state the definition being used, obtain the missing evidence, and recalculate before making a decision. Correct the process as well as the current number so the same error does not become routine.

Mistake 6: Accepting an automated result without reviewing the evidence, assumptions, exceptions, and required professional judgment

Better response. Reconstruct the underlying event, state the definition being used, obtain the missing evidence, and recalculate before making a decision. Correct the process as well as the current number so the same error does not become routine.

Decision checklist

- ☐ Can I explain demand in plain language and in professional terms?
- ☐ Can I explain reorder point in plain language and in professional terms?

- ☐ Can I explain safety stock in plain language and in professional terms?
- ☐ Can I explain economic order quantity in plain language and in professional terms?
- ☐ Have I stated the entity, currency or unit, date or period, and decision boundary?
- ☐ Can another person reproduce the number from retained evidence?
- ☐ Have I separated actuals, estimates, commitments, and scenarios?
- ☐ Have I tested timing, liquidity, risk, and at least one adverse outcome?
- ☐ Is the required approval proportional to the possible loss or legal consequence?
- ☐ Does the final output lead to a specific action, owner, and review date?

Practice lab

1. **Explain it.** Describe Demand to a person who has never studied finance. Then add the professional definition and identify one boundary your simple explanation omitted.
2. **Classify it.** Create five examples from your household or a small business and classify each using Reorder point. State any assumptions.
3. **Calculate it.** Rebuild the worked case with amounts 20% higher. Identify which conclusions change and which remain structurally true.
4. **Challenge it.** Describe a situation in which Safety stock could be measured correctly but still lead to a poor decision because timing, risk, or incentives were ignored.
5. **Design it.** Sketch a Varza screen or report for this chapter. Include fields, evidence links, status, owner, exceptions, and one AI-assisted action.

Answer guidance

A strong answer uses consistent definitions, reveals assumptions, distinguishes fact from estimate, and connects the result to an action. More than one conclusion may be reasonable when the learner clearly states the decision objective and uncertainty. The worked-case recalculation should preserve the method even when the numbers change.

Varza AI knowledge capsule

This capsule is intentionally explicit so that a retrieval system can distinguish canonical teaching points from examples and commentary.

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    "Safety stock: inventory held to protect service against uncertainty in demand, replenishment, supply quality, or timing.",
    "Economic order quantity: a classical model estimating an order size that balances ordering and holding costs under simplifying assumptions.",
    "Inventory: assets held for sale, in production for sale, or in the form of materials or supplies to be consumed in production or service delivery under the applicable framework.",
    "Working capital: the short-term resources and obligations used to sustain ordinary operations, often analyzed through current assets, current liabilities, and the cash conversion cycle.",
    "Inventory obsolescence: loss of inventory usefulness or recoverable value because of technological, market, legal, design, condition, or demand change.",
    "Capacity: the maximum or practical volume of work a resource system can deliver over a period under stated constraints."
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Suggested questions for Varza AI

- Explain this chapter using an example from a household, a shop, and a service business.
- Ask me five diagnostic questions before applying this concept to my situation.
- Show the difference between cash effect, accounting effect, and decision effect.

- Recalculate the worked case using my currency and assumptions, but preserve the original definitions.
- Identify which parts require local accounting, tax, legal, labor, or investment rules.

Sources and standards horizon

This chapter is original Varza educational content. It paraphrases and synthesizes concepts; it does not reproduce a standard or third-party article. The following sources were used to establish terminology, scope, and current professional context:

- **S003 — OECD-INFE, *Core Competencies Framework on Financial Literacy for MSMEs*.** 2018; accessed 2026-08-31. Financial capability for entrepreneurs and small-business managers. Source: https://www.oecd.org/en/publications/oecd-infe-core-competencies-framework-on-financial-literacy-for-msmes_220101c9-en.html
- **S009 — U.S. Small Business Administration, *Manage your business*.** accessed 2026-08-31. Ongoing compliance and financial management. Source: <https://www.sba.gov/counseling/manage-your-business/>
- **S102 — IFRS Foundation, *IAS 2 Inventories*.** 2026 standards set. Inventory cost, lower of cost and net realisable value, and cost formulas. Source: <https://www.ifrs.org/issued-standards/list-of-standards/ias-2-inventories/>
- **S206 — AICPA and CIMA, *Global Management Accounting Principles, second edition*.** 2026-03-30. Modern management accounting, value, analysis and sustainable decision support. Source: <https://www.aicpa-cima.com/resources/download/gmap-global-accounting-principles>

Standards horizon. Reviewed through 2026-08-31. IFRS 18 and the third edition of the IFRS for SMEs Accounting Standard are included as transition knowledge where relevant; both have mandatory effective dates beginning in 2027, with early application permitted under their respective requirements.

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