



VARZA SCHOOL · THE FOUNDATIONAL 100

The Economics of Service Work: Billable Time, Utilization, Capacity, and Realization

Chapter 78 · Track 8 — Project, Service, Labor, and Contract Finance

THE QUESTION IT ANSWERS

How can a service organization grow revenue without exhausting people, hiding write-offs, or mistaking booked hours for profitable delivery?

CONCEPTS DEFINED

Billable time · Utilization · Capacity · Realization rate · Service cost · Timesheet · Gross margin · Customer lifetime value

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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 treats projects, services, labor, and contracts as time-based financial systems. Scope, schedule, cost, billing, cash, obligations, and performance must be integrated; otherwise a project can appear successful in one view while failing in another.

Central question: How can a service organization grow revenue without exhausting people, hiding write-offs, or mistaking booked hours for profitable delivery?

Service economics connects available capacity, productive and billable use, standard value, invoicing, collection, scope, and customer outcome. Utilization measures use of capacity; realization measures conversion of potential value; neither should be optimized alone.

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 billable time in plain and professional language.
- Define and distinguish utilization in plain and professional language.
- Define and distinguish capacity in plain and professional language.
- Define and distinguish realization rate 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. Billable time

Working definition. Billable time is time contractually chargeable or attributable to customer work under defined billing rules.

Billable does not automatically mean productive, collected, or profitable. Validate against scope, rate, cap, approval, and write-off. In Varza language, the concept becomes useful when it changes a decision.

Simple example. Six recorded hours are billable, but one hour is written off because it exceeded the agreed cap.

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.

2. Utilization

Working definition. Utilization is the proportion of available working capacity used for defined productive or billable activity.

State numerator and denominator. High utilization can damage quality, learning, sales, and resilience if all non-billable time is treated as waste. The professional term matters because it prevents two different realities from being recorded as though they were the same.

Simple example. 1,200 billable hours divided by 1,600 available hours gives 75% billable utilization.

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.

3. 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. A non-specialist can understand this by separating the object, the timing, and the consequence.

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

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.

4. Realization rate

Working definition. Realization rate is the proportion of potential or standard billable value that is actually invoiced or collected under a stated definition.

Separate rate discount, write-off, non-billable work, billing delay, and collection loss. The concept should be measured at the smallest level that still supports a real action.

Simple example. CU 90,000 invoiced against CU 100,000 standard time value gives 90% billing realization.

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.

5. Service cost

Working definition. Service cost is the resources consumed to perform and support a service for a customer, contract, case, or service unit.

Include direct time and relevant non-labor resources, travel, technology, supervision, rework, and support. Unused capacity requires separate visibility. The number alone is not enough; its definition determines whether comparisons are valid.

Simple example. The cost of a field visit includes technician time, travel, parts, scheduling, and support.

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.

6. Timesheet

Working definition. Timesheet is a record of time spent by a person across activities, projects, customers, leave, or other categories.

Time records support payroll, billing, project cost, utilization, compliance, and capacity—but only if categories, approval, cutoff, and anti-fabrication controls are credible. This is where operational activity and financial reporting meet.

Simple example. A consultant records eight hours split between two customers and internal training.

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.

7. Gross margin

Working definition. Gross margin is revenue less the directly associated cost of goods or services sold, expressed as an amount or percentage under a stated definition.

Define whether freight, labor, platform fees, discounts, returns, and variable service costs are included. Comparisons fail when definitions drift. In Varza language, the concept becomes useful when it changes a decision.

Simple example. CU 100,000 revenue less CU 62,000 cost of sales gives CU 38,000 gross margin.

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.

8. Customer lifetime value

Working definition. Customer lifetime value is the estimated economic contribution expected from a customer relationship over its duration under stated revenue, margin, retention, service-cost, and discount assumptions.

Lifetime value is a model, not an asset automatically recognized in accounts. Use cohorts and sensitivity rather than a single heroic average. The professional term matters because it prevents two different realities from being recorded as though they were the same.

Simple example. Expected annual contribution of CU 600 for four years has a value that depends on retention and discount rate.

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.

How the concepts connect

The concepts in this chapter are a system, not a vocabulary list. Billable time, Utilization, Capacity, Realization rate, Service cost, Timesheet, Gross margin, and Customer lifetime value 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

Utilization

$$\text{Utilization} = \text{Defined productive or billable hours} \div \text{Practical available hours}$$

The metric shows capacity use under a stated definition.

Boundary: Define available hours, excluded leave, internal value, overtime, and skill constraints.

Billing realization

Billing realization = Billed value ÷ Standard value of billable work

The metric captures discount and write-off from standard value.

Boundary: It does not capture collection unless a cash-realization measure is separately defined.

Revenue capacity

Potential revenue = Practical capacity hours × Target utilization × Expected realized rate

The driver model links people capacity to revenue.

Boundary: Demand, mix, fixed-price work, quality, scheduling, and collection may constrain the result.

Worked case — High utilization, weak realization

A consulting team has 10,000 practical annual hours, records 8,000 billable hours, standard value CU 1.6 million, invoices CU 1.28 million, and collects CU 1.20 million.

Item	Amount or observation
Utilization	$8,000 \div 10,000 = 80\%$
Billing realization	$1.28\text{m} \div 1.60\text{m} = 80\%$
Cash realization on billed	$1.20\text{m} \div 1.28\text{m} = 93.75\%$
Effective collected value per billable hour	CU 150
Issue	scope write-offs and discounting reduce economics

Calculation and reasoning

1. The team appears highly utilized at 80%.
2. Only 80% of standard billable value becomes invoices, suggesting discount, fixed-fee overrun, or write-off.
3. Collection is strong but not complete.
4. Investigate customer, partner, service, and scope causes rather than raising utilization further.
5. Compare the CU 150 collected value per billable hour with fully burdened cost and required profit.

What the result means

More work is not necessarily the answer. The system may need better scope, pricing, skill mix, delivery design, and collection while protecting sustainable capacity.

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. **Define practical capacity by skill, team, and period.** 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. **Capture time to customer, project, internal value, leave, and unavailable categories.** 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. **Reconcile billable time to scope, invoice, write-off, and collection.** 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. **Analyze utilization, realization, quality, burnout, and customer outcome together.** 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 employee, skill, capacity_calendar, timesheet, service_order, billable_hour, standard_rate, invoice, write_off, utilization_metric, realization_metric. 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:

- Begin with the real event, not the accounting label.
- Keep value, cash, profit, and ownership distinct until their relationship is proven.
- Attach every important number to a source, period, currency, entity, and responsible person.

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 retroactive timesheet fabrication to reach targets.** The control should be proportionate to value and risk, documented clearly, and tested often enough to detect failure before the consequence becomes irreversible.
2. **Utilization ceilings as well as floors.** The control should be proportionate to value and risk, documented clearly, and tested often enough to detect failure before the consequence becomes irreversible.
3. **Write-off approval and cause analysis.** The control should be proportionate to value and risk, documented clearly, and tested often enough to detect failure before the consequence becomes irreversible.
4. **Capacity forecast by skill, not only total headcount.** The control should be proportionate to value and risk, documented clearly, and tested often enough to detect failure before the consequence becomes irreversible.
5. **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.
6. **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.

- 7. 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: Targeting 100% billable utilization

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: Calling all internal learning and sales time unproductive

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: Measuring realization from list rate that no customer pays

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: Hiding fixed-price overrun by not recording actual hours

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 billable time in plain language and in professional terms?
- ☐ Can I explain utilization in plain language and in professional terms?
- ☐ Can I explain capacity in plain language and in professional terms?
- ☐ Can I explain realization rate 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 Billable time 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 Utilization. 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 Capacity 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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    "Capacity: the maximum or practical volume of work a resource system can deliver over a period under stated constraints.",
    "Realization rate: the proportion of potential or standard billable value that is actually invoiced or collected under a stated definition.",
    "Service cost: the resources consumed to perform and support a service for a customer, contract, case, or service unit.",
    "Timesheet: a record of time spent by a person across activities, projects, customers, leave, or other categories.",
    "Gross margin: revenue less the directly associated cost of goods or services sold, expressed as an amount or percentage under a stated definition.",
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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:

- **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>
- **S207 — Institute of Management Accountants, *Expanded Management Accounting Competency Framework*.** 2025. Current finance and accounting competency domains. Source: https://prodcn.imanet.org/-/media/IMA/Files/Home/Career-Resources/Competency-Framework/2025Nov17CompetencyFrameworkWhitePaper_LP_Final_PDF.ashx
- **S106 — IFRS Foundation, *IAS 19 Employee Benefits*.** 2026 standards set. Recognition of employee-benefit obligations and expense. Source: <https://www.ifrs.org/issued-standards/list-of-standards/ias-19-employee-benefits/>

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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