Project Quality Management: Building Standards for IT Success

7204201 Project Management in Information Technology : Paranya Palwisut

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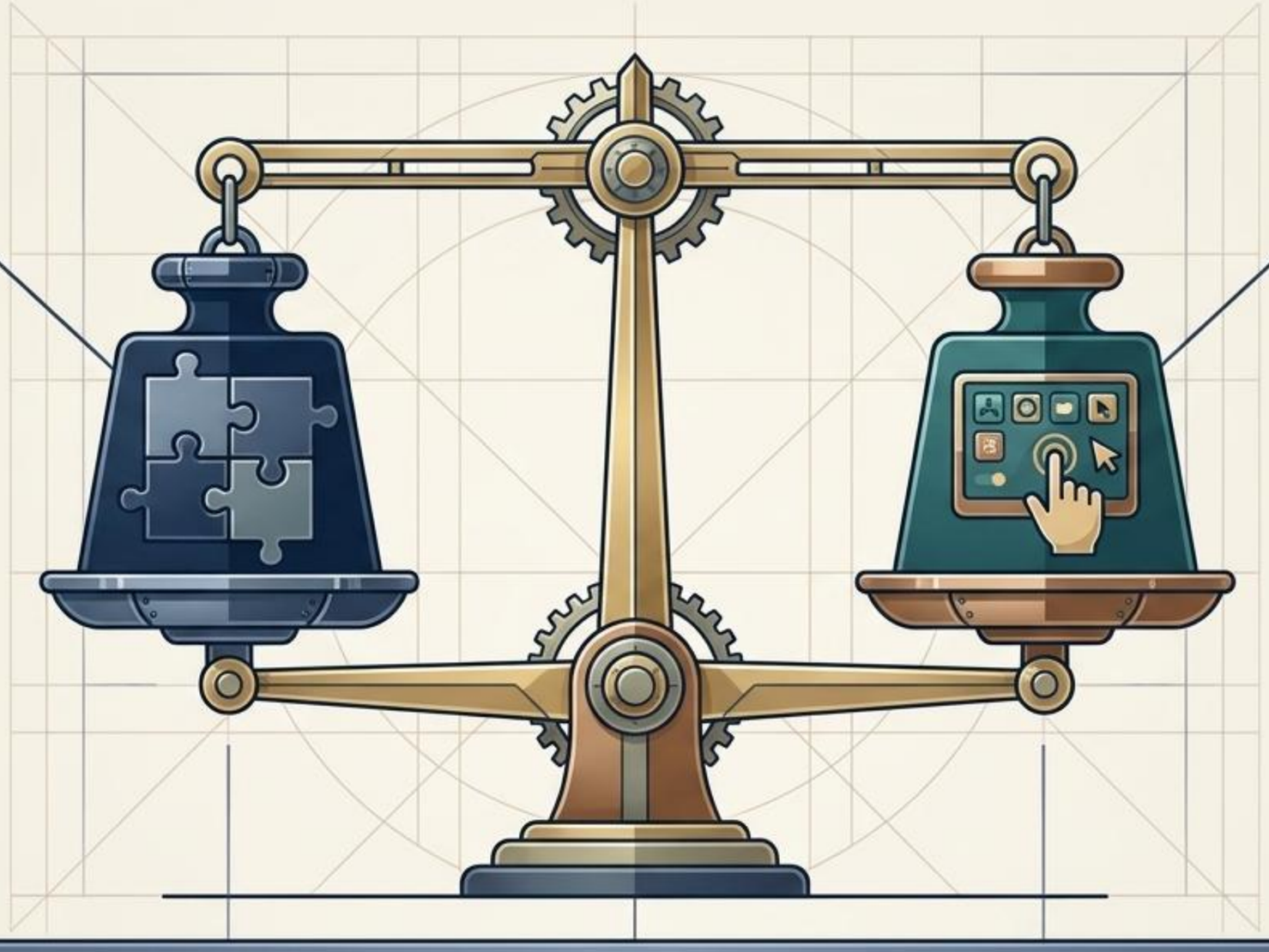
Conformance to Requirements

Executing exactly what was agreed upon during project planning.

The final deliverable matches the completely documented written specifications.



Fitness for Use

The developed product or service is actually functional in the real world.

It successfully responds to intended business needs and objectives.

The Success Equation:

Quality = Fulfilling both documented requirements and inherent user needs.

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Mindset Shift: Prevention over Inspection.

The core principle is to make standard quality a fundamental part of “Project Design’. Focus on preventing defects from occurring rather than waiting to fix them when errors inevitably arise.

IT Project Focus

1. Supporting continuous system development.
2. Planning for appropriate response times.
3. Ensuring accuracy and precision of information systems.

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Scope Impact Dimensions

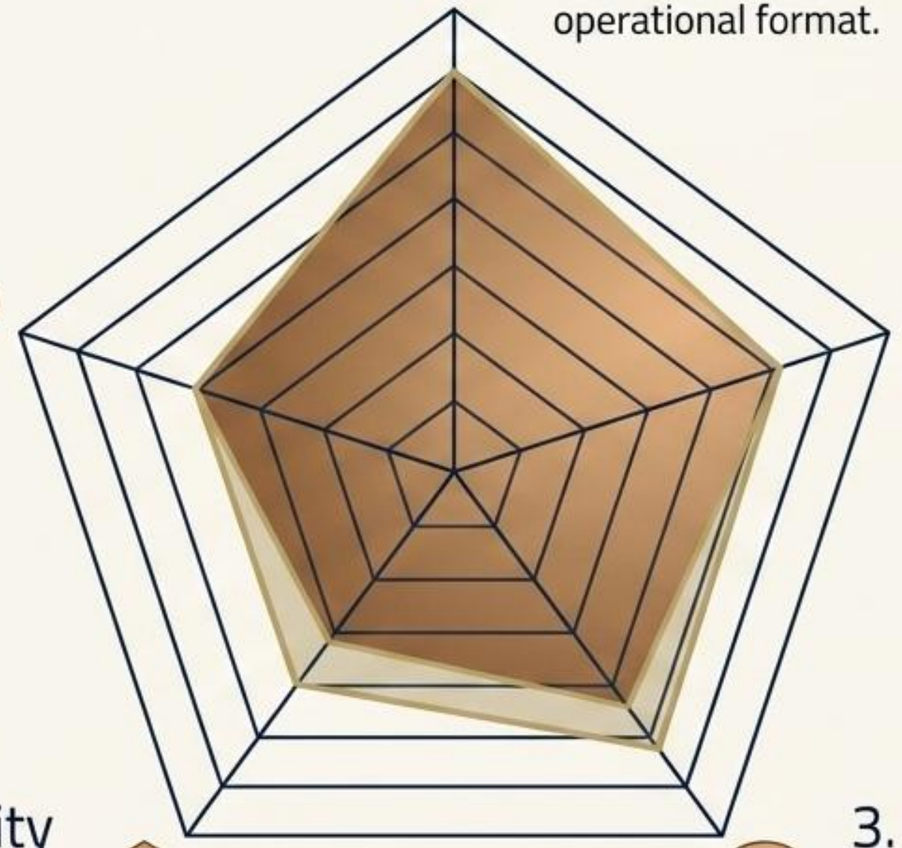
1. Operability
Alignment with the designed operational format.

2. System Outputs
The actual efficiency and quality of the generated outputs.

3. Performance
System operation meeting the specified benchmark standards

4. Reliability
The stability and durability of the system over time

5. Maintainability
The capacity for future development and system upgrades



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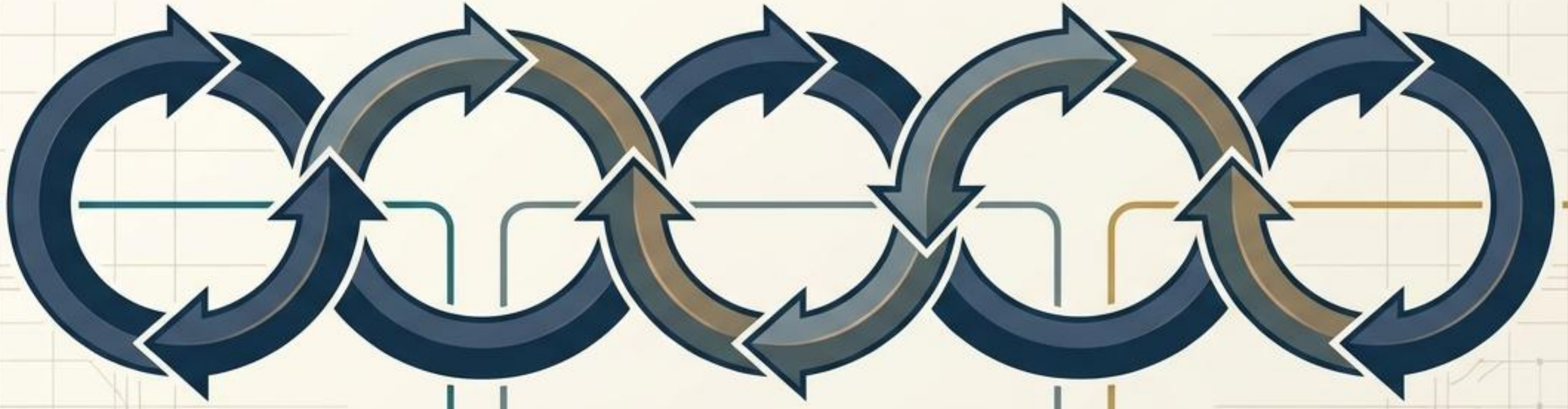
The Framework: The Quality Management Triad.



1. Quality Planning

Focus: Set Standards

Establish guidelines and drive the project to have standards from the design phase.

2. Quality Assurance

Focus: Audit Process

Periodically evaluate performance to ensure processes align with the established standards.

3. Quality Control

Focus: Inspect Output

Thoroughly inspect specific deliverables and propose guidelines for overall quality improvement.

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01 Quality Planning (The Foundation)

> Defining project quality standards and mapping the exact route to achieve agreed-upon goals.

The plan must address both Conformance to requirements and Fitness for use.

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02 Quality Assurance (The Process Audit)

Periodic Evaluation of overall project execution to ensure processes align with established standards. Ultimate Goal: Continuous Improvement.

Core QA Tools

Benchmarking
(Looking Outward)

Comparing our project activities to similar projects (internal or external) to find the ultimate best practices.

Quality Audit
(Looking Inward)

Systematic review of activities by domain experts to find flaws and extract ‘Lessons Learned’ for the future.

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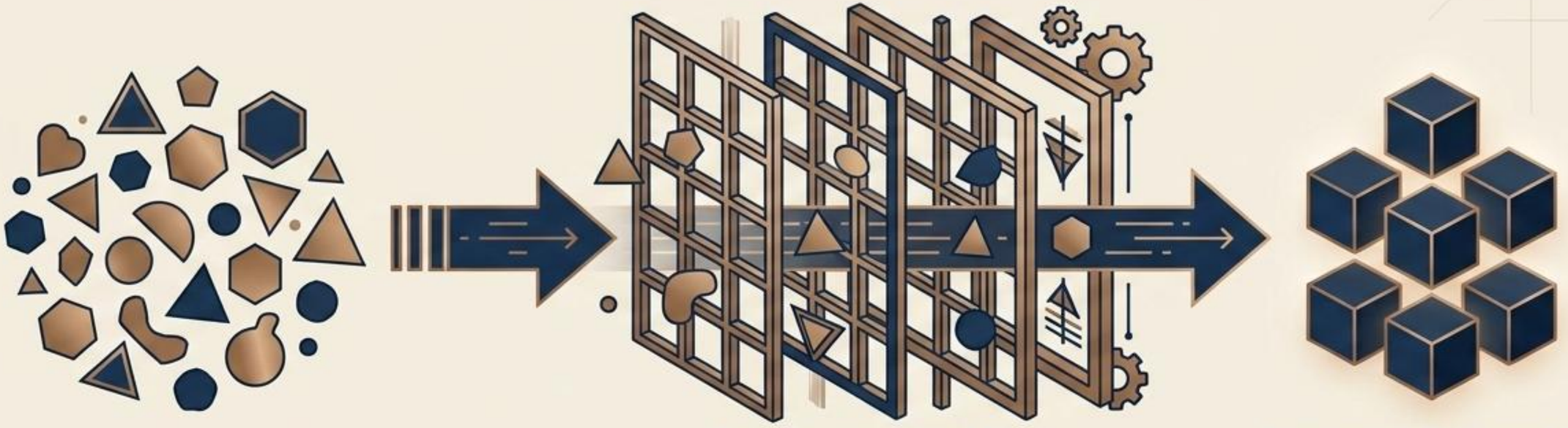
03 Quality Control (The Deliverable Filter)

The detailed inspection of specific project deliverables to ensure they meet the defined quality standards.



Expected QC Outcomes

1. **Acceptance Decisions:** Deliverables are acceptable and ready for handoff.
2. **Rework:** Deliverables fail acceptance. Warning: Rework carries high costs and lost value; proper QA should avoid this.
3. **Process Adjustments:** Proactive corrections to prevent the root cause of the defect from recurring.

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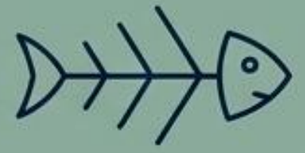
The Toolkit: 7 Basic Quality Tools

Pareto Chart
Triage & Prioritize

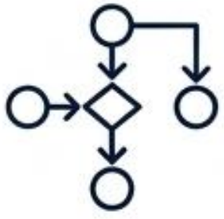


Fishbone Diagram
Root Cause Investigation

Control Chart
Process Monitoring

Scatter Diagram
Variable Correlation

Histogram
Frequency Distribution



Flowchart
Process Mapping

Check Sheet
Data Gathering

The core focus of this toolkit is pinpointing maximum-impact issues, analyzing root causes, and stabilizing systems.

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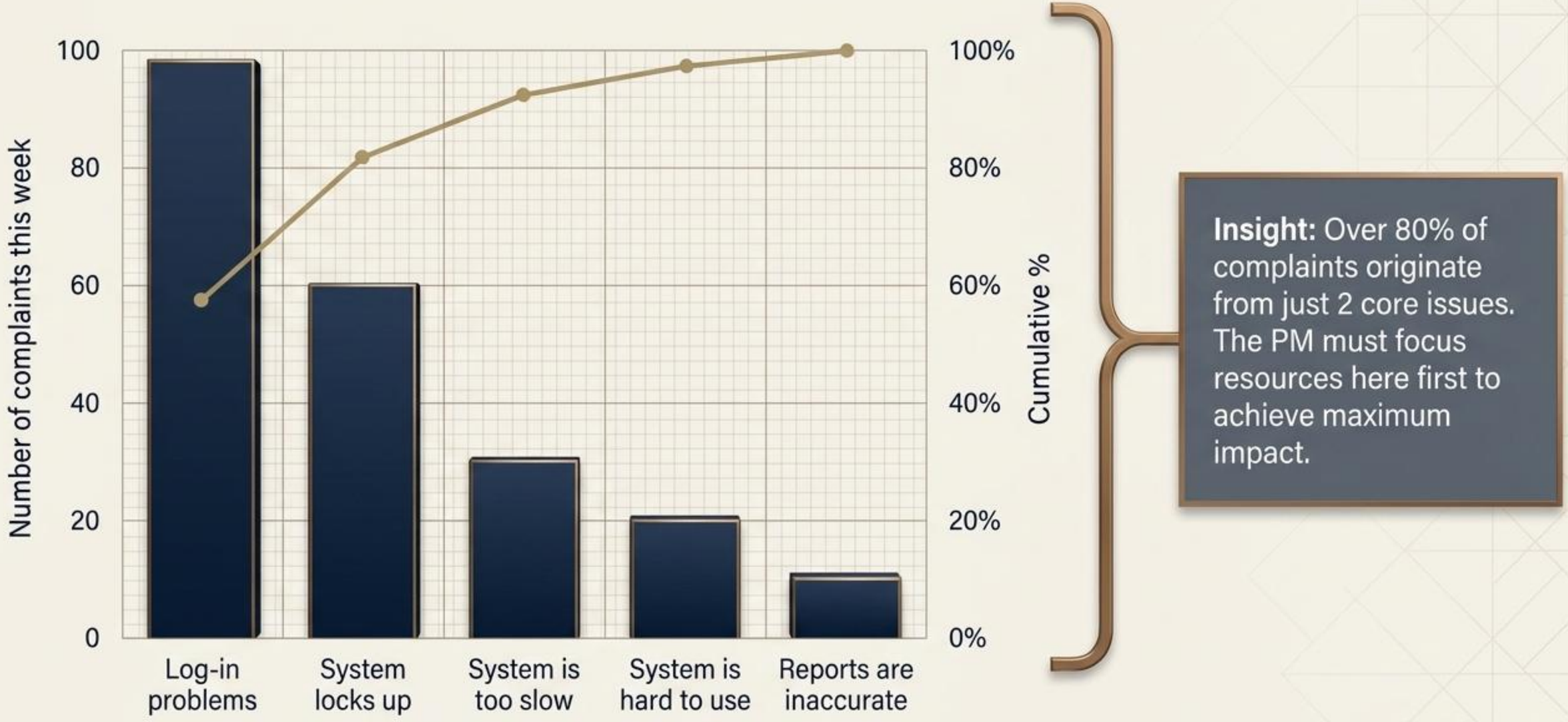
Triage via Pareto Chart: The 80/20 Rule



Insight: Over 80% of complaints originate from just 2 core issues. The PM must focus resources here first to achieve maximum impact.

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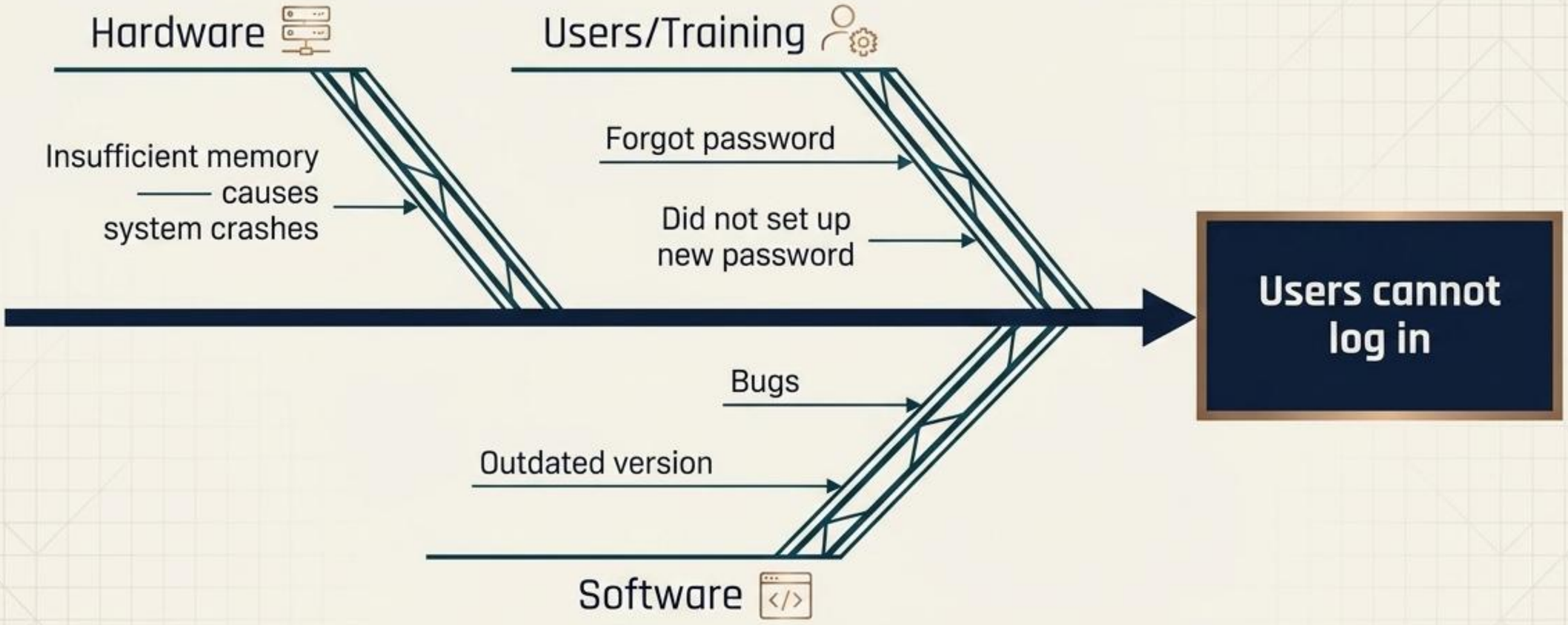
Root Cause Investigation: Fishbone Diagram



Categorizing variables allows the PM to choose targeted interventions (e.g., adding server RAM vs. overhauling the user password reset flow).

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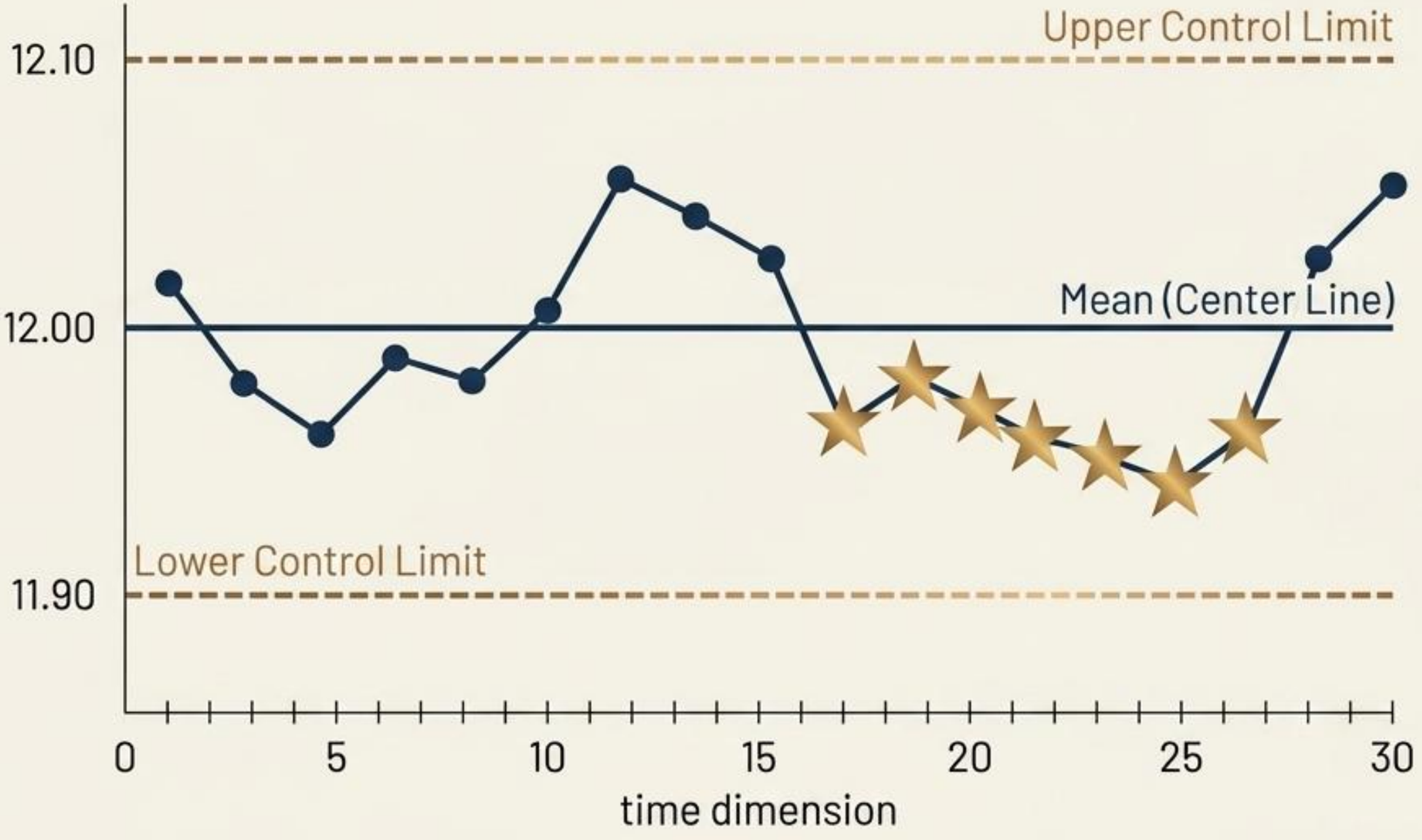
Process Stability: Control Chart & The Seven Run Rule



Red Flags

The Seven Run Rule: 7 consecutive data points on one side of the mean (even without breaching the Control Limits) indicate a systemic anomaly.

This is an early warning system requiring immediate PM intervention.

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Efficiency at Scale: Statistical Sampling & Six Sigma

Statistical Sampling

Reduce time and cost while maintaining accuracy. Examples: Code Review of large modules, Hardware batch testing, User Acceptance sampling.

Six Sigma & DMAIC

The ultimate framework for long-term systematic improvement:

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The Ultimate Check: Testing vs. Verification

	Quality Control (Testing)	Scope Verification (Verification)
Goal	**Correctness.** Is the deliverable built exactly to specification and free of defects?	**Acceptance.** Does the deliverable actually solve the client's business need?
Action	Testing for bugs, Unit Tests, Server speed checks.	User Acceptance Testing (UAT), formal client sign-off and handoff.
	Building the product RIGHT.	**Building the RIGHT product**

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Conclusion: The Continuous Improvement Engine

Quality management transforms reactive firefighting into proactive engineering.

1. Reduce Cost

Prevent high-value rework through early planning.

2. Increase Stability

Utilize data-driven decisions (Six Sigma, Control Charts)

3. Deliver Business Value

Hand over an IT product that meets precise standards and achieves maximum stakeholder satisfaction.

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