

QUALITY MANAGEMENT

PMP Exam Preparation

By Antony Jones

PMP Certified

Why Do You Seek PMP Certification?

How Does PMP Certification, Going To Make A Difference To You?

What Is The Ultimate Purpose Here?

Agenda

1. Quality vs. Grade
2. Plan Quality Management
3. Control Quality
4. Manage Quality
5. Cost of Quality (COQ)
6. Seven Basic Quality Tools
7. Quality Metrics & Continuous Improvement
8. PMP Exam Tips



During a periodic review with stakeholders, the project sponsor asks how the project will measure satisfactory completion of the deliverables and how those measurements are applied. Where can the project manager find this information?

- A. Scope management plan.
- B. Requirements management plan.
- C. Quality management plan.
- D. Work performance reports.

Solution: B. Requirements management plan

The Requirements Management Plan is correct because it is a component of the project or program management plan that describes how requirements will be analyzed, documented and managed.. The Quality Management Plan is incorrect because it identifies the quality requirements and/or standards for the project and its deliverables, and documenting how the project will demonstrate compliance with quality requirements and/ or standards.

The Scope Management Plan is incorrect because it's a component of a project or program management plan that describes how the scope will be defined, developed, monitored, controlled and validated.

The Work Performance Reports is incorrect because it is the physical or electronic representation of the work performance information compiled in project documents, intended to generate decisions, actions or awareness.

This question and rationale were developed in reference to:

PMBOK® Guide--Fifth Edition (5th) PMI/PMI/8/231 [Item]

| Project Manager's Portable Handbook, 3rd Ed (2015) David I Cleland and Lewis R Ireland/McGraw Hill Companies, Inc./6/267 [Item]

Quality vs. Grade

Quality

- Degree to which requirements are met
- Low quality is ALWAYS a problem
- Relates to conformance



- Example: Software with many bugs = low quality (unacceptable)
- Accuracy, Precision, Tolerances are explicitly stated

Grade

- Category for products with same function but different requirements
- Low grade may be acceptable
- Relates to features & functionality

- Example: Basic vs. Premium software = different grade (both acceptable)

Exam Tip: Low quality requires rework and is never acceptable. Low grade may be fine if it meets requirements.

Quality Management Trends: Customer Satisfaction is paramount, continuous Improvement, management responsibility, vendor partnerships

8. Quality management is a vital aspect of any project. Which of the following quality control aspects is a component of a high functioning measurement system?

- A. Accuracy
- B. Non-precision
- C. Non-repeatability
- D. Duration

Solution: A. Accuracy

A good measurement system should take as long as is needed to ensure that the deliverables meet the needs of the project i.e. Duration is not a component of a good measurement system. Accuracy, Precision, and Repeatability are components of a good measurement system.

This question and rationale were developed in reference to:

<https://www.pmi.org/learning/library/practice-three-project-quality-management-7198> [Item Quality in project management--a practical look at chapter 8 of the PMBOK® guide (CONFERENCE)]

Plan Quality Management

Process: Identify quality requirements and standards; document how the project will demonstrate compliance.

Inputs

- Project Charter
- Requirements Documentation
- Risk Register
- Stakeholder Register
- Enterprise Environmental Factors
- Organizational Process Assets

Tools & Techniques

- Cost-Benefit Analysis
- Cost of Quality (COQ)
- Benchmarking
- Design of Experiments (DOE)
- Statistical Sampling
- Flowcharting
- Affinity Diagrams

Outputs

- Quality Management Plan
- Quality Metrics
- Process Improvement Plan
- Quality Checklists
- Project Document Updates: Risk Register, Issue Log, Lessons Learnt Register



Deliverables & Tools

"The degree to which a set of inherent characteristics fulfills requirements."

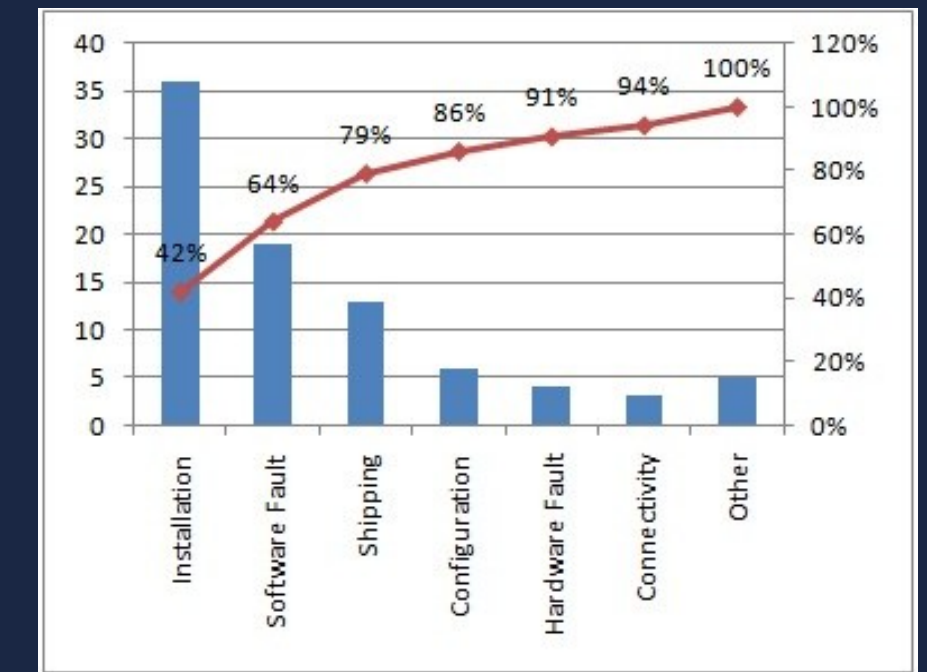
- ISO 9000

Key Deliverables

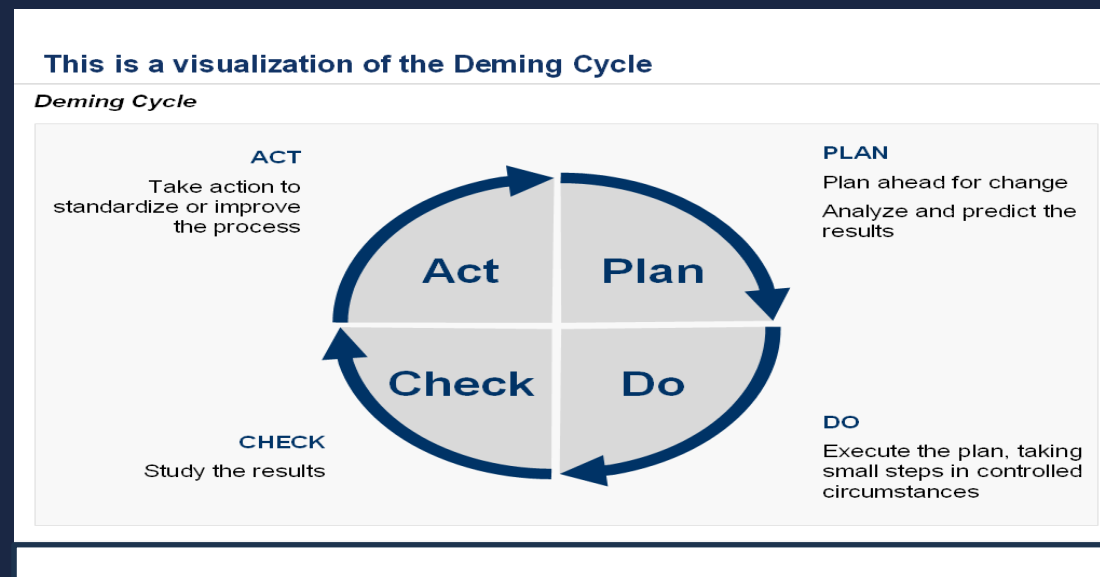
- Customer satisfaction is the priority
- Prevention over inspection
- Management responsibility
- Continuous improvement
- Fact-based decision making

Quality Gurus

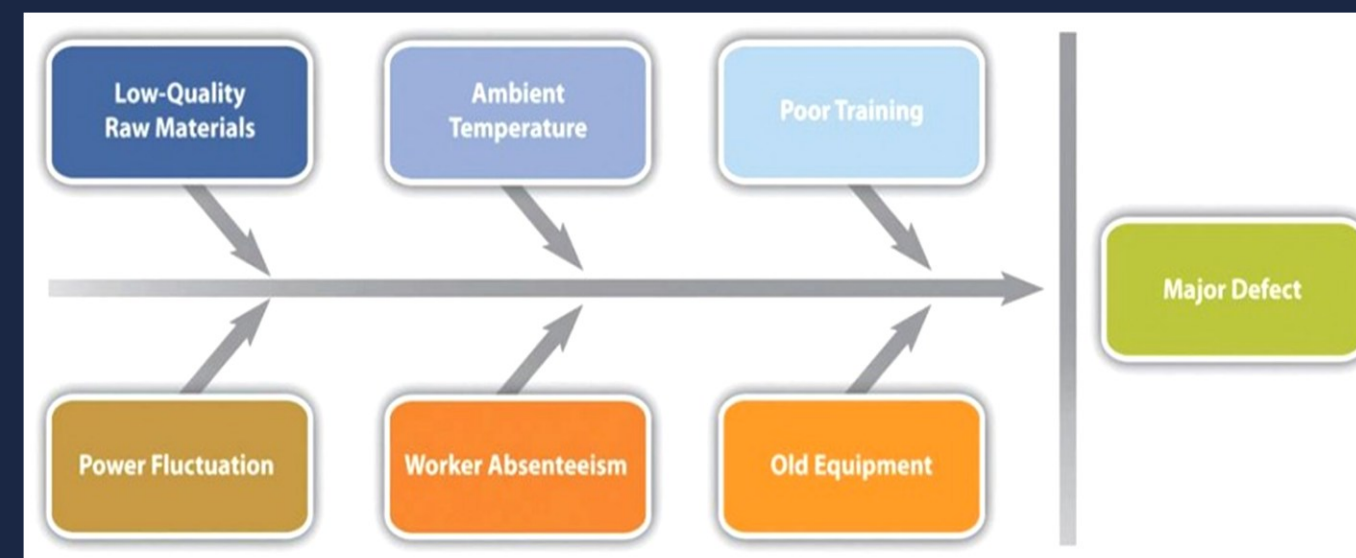
- Deming: Plan-Do-Check-Act (PDCA)
- Pareto Principle 80/20 rule
- Crosby: Zero defects, quality is free
- Ishikawa diagrams: Root Cause Analysis
- Six Sigma: 3.4 defects per million
- Juran: Fitness for use



Pareto 80/20



PDCA Cycle



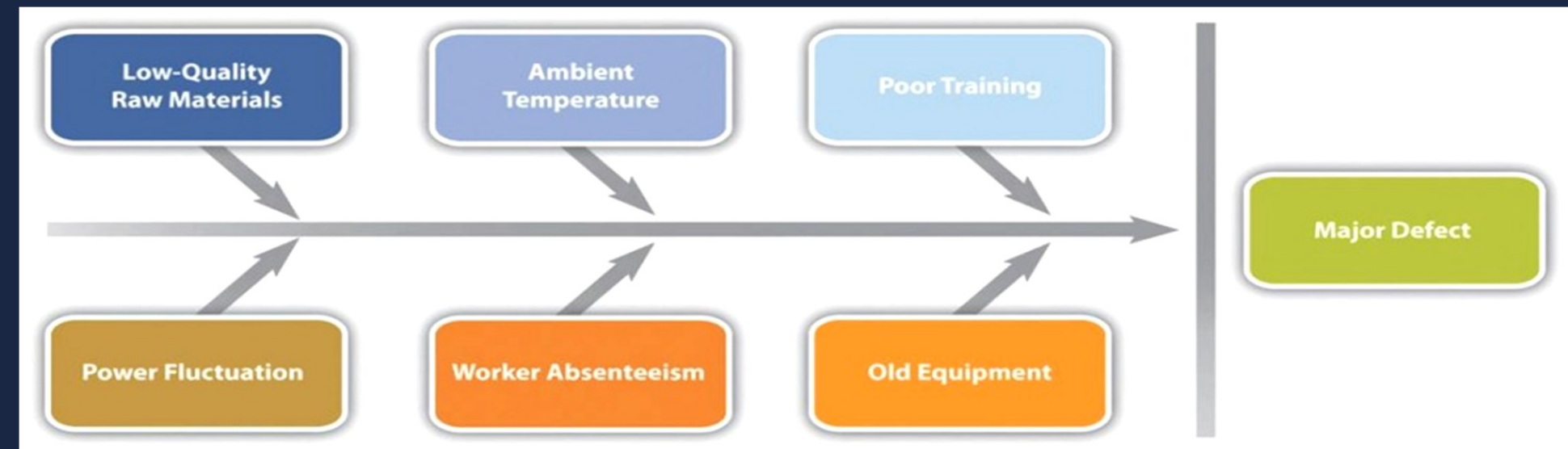
Ishikawa/Fishbone Diagram



Juran's Fitness For Use

While reviewing a status report, a project manager notices that, over a period of six months, the coding quality for one developer is statistically lower than another developer assigned the same task. Which tool should the project manager use to trace the problem's source back to its actionable root cause?

- A. Histogram
- B. Control chart
- C. Scatter diagram
- D. Ishikawa diagram



Solution: D. Ishikawa diagram

An Ishikawa diagram is also known as a fishbone diagram or a cause-and-effect diagram. This will show the project manager the root cause of the problem. A histogram will show the number of defects per deliverable, not the causes. A scatter diagram shows the relationship between two variables. It can be used to determine a problem, not the cause. Control charts are used to show the maximum and minimum values that meet the requirements, again, not the cause.

This question and rationale were developed in reference to:

e-Reads (No Date) ///Fundamentals of Effective Program Management: A Process Approach Based on the Global Standard, Chapter 7 - Program Quality Management; Seven Basic Tools of Quality [Item]

| OLD - PMBOK® Guide--Fourth Edition (Dec 1 2008 12:00AM) PMI/PMI//Page 212 [Item]

| PMBOK® Guide--Fifth Edition (5th) PMI/PMI//Section 8.1.2.3 [Item]

Control Quality

Process: Monitor and record results of quality activities to assess performance. Also called Quality Control (QC).

Inputs

- Deliverables
- Work Performance Data
- Quality Metrics
- Quality Checklists
- Approved Change Requests
- Project Documents

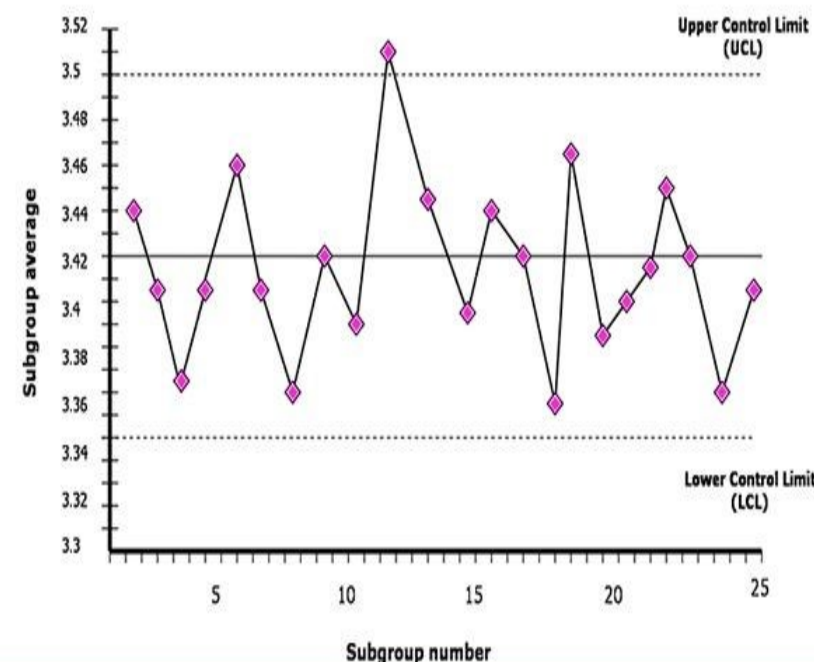
Tools & Techniques

- Inspection
- Testing/Product Evaluations
- Statistical Sampling
- Check Sheets
- Control Charts
- Questionnaires & Surveys
- Performance Reviews

Outputs

- Verified Deliverables
- Work Performance Information
- Quality Control Measurements
- Change Requests
- Project Document Updates

Control Charts



Check Sheet

Vehicle Breakdown Maintenance Check Sheet

Name of operator: David

Sheet Number: 12

Date: 04-Nov-2020

Place: Amherst, Ohio

Defect Types	Frequency					Total
	Vehicle 1	Vehicle 2	Vehicle 3	Vehicle 4	Vehicle 5	
Brake pads worn out	X		X			2
Fuel tank leakage		X				1
Steering locked				X		1
Engine oil seepage		X	X			2
AC not working	X			X		2
Battery drained out			X			1
Lights not working	X				X	2
Total	3	2	3	2	1	

Simple random sample



Systematic sample



Stratified sample



Cluster sample



A project manager is working with stakeholders to identify the steps that must be completed as part of a task. The project manager needs to be able to verify that team members have completed all the steps required when performing a frequently performed task.

What should the project manager use?

- A. Flowchart
- B. Checklist
- C. Histogram
- D. Facilitation

Solution: B. Checklist

The project manager should use a checklist as it is generally used in validating process steps have been implemented.

The other answer choices are incorrect. Flowcharts can only be used to outline process steps not verify that they have been conducted; histograms reflect frequency distribution and will not verify team members have completed the tasks; and facilitation is the ability to effectively guide a group event to a successful decision, solution, or conclusion.

This question and rationale were developed in reference to:

PMBOK Guide Sixth Edition (2018) PMI/PMI//80 [Item]

| Project management : A Systems Approach to Planning, Scheduling, and Controlling (2009) Harold Kerzner/John Wiley/5.24/ [Item]

6. A customer is concerned that the current project deliverable will not fulfil stated project requirements. What could be done to alleviate customer concerns?

- A. Schedule a meeting to remind the customer of requirements previously communicated to the team.
- B. Document the customer's concern as a risk in the risk register and plan accordingly.
- C. Manage the concern at the review of each deliverable with the customer.
- D. Ask a product owner to review the acceptance criteria previously discussed with the customer.

Solution: D. Ask a product owner to review the acceptance criteria previously discussed with the customer

To align the customer expectations with the upcoming deliveries the product owner should work with the customer to describe functional behavior as acceptance criteria (definition of Done).

This question and rationale were developed in reference to:

O'Reilly Platform (No Date) /// [Item The Agile Developer's Handbook by Paul Flewelling Published by Packt Publishing, 2018 Acceptance criteria]

| The Agile Practice Guide (No Date) PMI/PMI/5/52 [Item]

Manage Quality

Process: Translate the quality management plan into executable quality activities. Also called Quality Assurance.

Inputs

- Quality Management Plan
- Quality Metrics
- Quality Control Measurements
- Project Documents
- Organizational Process Assets

Tools & Techniques

- Quality Audits (Processes)
- Process Analysis: 5Why's?
- Design for X (DfX)
- Root Cause Analysis (Ishikawa)
- Flowcharts & Histograms
- Affinity Diagrams
- Multi-Criteria Decision Analysis

Outputs

- Quality Reports
- Test & Evaluation Documents
- Change Requests
- Project Management Plan Updates
- Project Document Updates

	Attribute Or Criteria	Non Beneficial	Beneficial	Beneficial	Beneficial
		Price or Cost	Storage Space	Camera	Looks
Alternative	Mobile 1	0.8	0.5	0.75	1
	Mobile 2	1	0.5	0.5	0.6
	Mobile 3	0.667	1	1	0.8
	Mobile 4	0.727	1	0.5	0.8
	Mobile 5	0.889	0.5	1	0.4

Normalized Decision Matrix



A team receives outsourced deliverables and determines that they do not meet the agreed-upon acceptance criteria. What should the project manager reference to verify this with the vendor?

- A. Procurement management plan
- B. Request for proposal (RFP)
- C. Statement of work (SOW)
- D. Inspections

Solution: C. Statement of work (SOW)

Statement of Work(SOW) will contain all the work that needs to be executed for the project to be completed and accepted. Hence this is the correct answer.

All other remaining options are irrelevant as

Procurement Management Plan will describe how procurement will be done and how vendors will be managed.

The Request for Proposal(RFP) describes the project, its goals, and the organization that is sponsoring it and outlines the bidding process and contract terms.

Inspections are carried out to identify and correct errors in a completed deliverable.

This question and rationale were developed in reference to:

IT Project Management, 7th Ed. (7th) Kathy Schwalbe///Pgs. 491 - 492 [Item]

| PMBOK® Guide--Fifth Edition (5th) PMI/PMI/12/367 [Item]

Cost of Quality (COQ)

Total cost incurred over the life of the product by investment in preventing nonconformance, appraising conformance, and failure.

Prevention Costs

- Training
- Document processes
- Equipment
- Time to do it right

Appraisal Costs

- Testing
- Inspections
- Destructive testing losses
- Audits

Internal Failure Leads To:

- Rework
- Scrap/Waste
- Downtime
- Defect repair

Cost of Non-Conformance

External Failure

- Warranty repairs
- Liability
- Lost business
- Customer complaints

A project manager is creating a software project's quality management plan. While reviewing lessons learned from past, similar projects, the project manager discovers that rework due to quality issues resulted in cost overruns. What should the project manager do to ensure that quality is addressed throughout the software development life cycle?

- A. Conduct recurring retrospectives to regularly check on the effectiveness of quality processes.
- B. Assign a resource to focus solely on the project's quality.
- C. Ensure that quality is tied to performance reviews.
- D. Identify new quality policies and procedures for the project.

Solution: A. Conduct recurring retrospectives to regularly check on the effectiveness of quality processes

The PM has identified that quality may be a risk in this project, based on lessons learned from past projects. In developing the quality management plan, the PM should ensure that quality checks are done regularly so that the risk is avoided. The responsibility of managing quality would typically require several skill sets that one person may not have. The team should be involved in quality management. Tying quality to performance reviews will not avoid the same quality issues that have happened in the past. The quality management plan should incorporate the organizations quality policies and procedures.

This question and rationale were developed in reference to:

PMBOK Guide Sixth Edition (2018) PMI/PMI/8/276 [Item]|The Project Management Tool Kit: 100 Tips and Techniques for Getting the Job Done Right (No Date) /Amacom/Quality Process 70/Analyze Variances

How is PMP 8th Edition Different ? When it will be in Effect ?

From the 9th July 2026

People	Process	Business
33% In 7 th Edition People Domain was 42% Timing has been increased: 180 questions in 240 mins	41% Process Domain was 51% Exam Tips: Remember the 155mins rule(Cover the first 60 Q's in 85 mins)	26% Was 8% Clear focus on practical real time business scenarios. Follow global businesses, AI and other tech disruptions, Wars & Natural Calamities

7. A project is being audited to ensure compliance with organizational policies. What process is being conducted?

- A. Audit Schedule
- B. Plan Quality Management
- C. Control Quality
- D. Manage Quality

Answer: D. Manage Quality

"Manage Quality is the process of translating the quality management plan into executable quality activities that incorporate the organization's quality policies into the project. The key benefits of this process are that it increases the probability of meeting the quality objectives as well as identifying ineffective processes and causes of poor quality.

Manage Quality uses the data and results from the control quality process to reflect the overall quality status of the project to the stakeholders. This process is performed throughout the project.

Manage Quality is sometimes called quality assurance, although Manage Quality has a broader definition than quality assurance as it is used in non project work. In project management, the focus of quality assurance is on the processes used in the project. Quality assurance is about using project processes effectively. It involves following and meeting standards to assure stakeholders that the final product will meet their needs, expectations, and requirements. Manage Quality includes all the quality assurance activities, and is also concerned with the product design aspects and process improvements.

Thank You

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