



Empowering Excellence: A Year of CI/CD Evolution

Sony Engineering Internship Review | Quarters 1-4

Presented by: **Manprit Singh Panesar**

HINT: Focus on "Mission": Making the infrastructure invisible so developers can focus solely on code.

The One-Year Journey



Phase 1

Foundations

Learning & Basic Automation
(Jenkins/Docker)

Phase 2

Unified CI

Shared Library for Multi-
Stack Integration

Phase 3

Scalability

Mobile CI/CD (Android
Support)

Phase 4

Innovation

AI/ML Driven Infrastructure
Analysis

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Phase 1: Foundations & Mastery

Bridging the Knowledge Gap

During the first three months, the focus was on mastering the core pillars of modern DevOps to align with Sony's high engineering standards.

- ✓ **Jenkins Architecture:** Deep dive into Pipeline-as-Code.
- ✓ **Docker Fundamentals:** Containerizing build environments.
- ✓ **Groovy Scripting:** Powering automation logic.



HINT: Mention these aren't just tools; they are the "Global Standards" for reliability at Sony.

POC 1: Repo Hygiene

Automating Maintenance

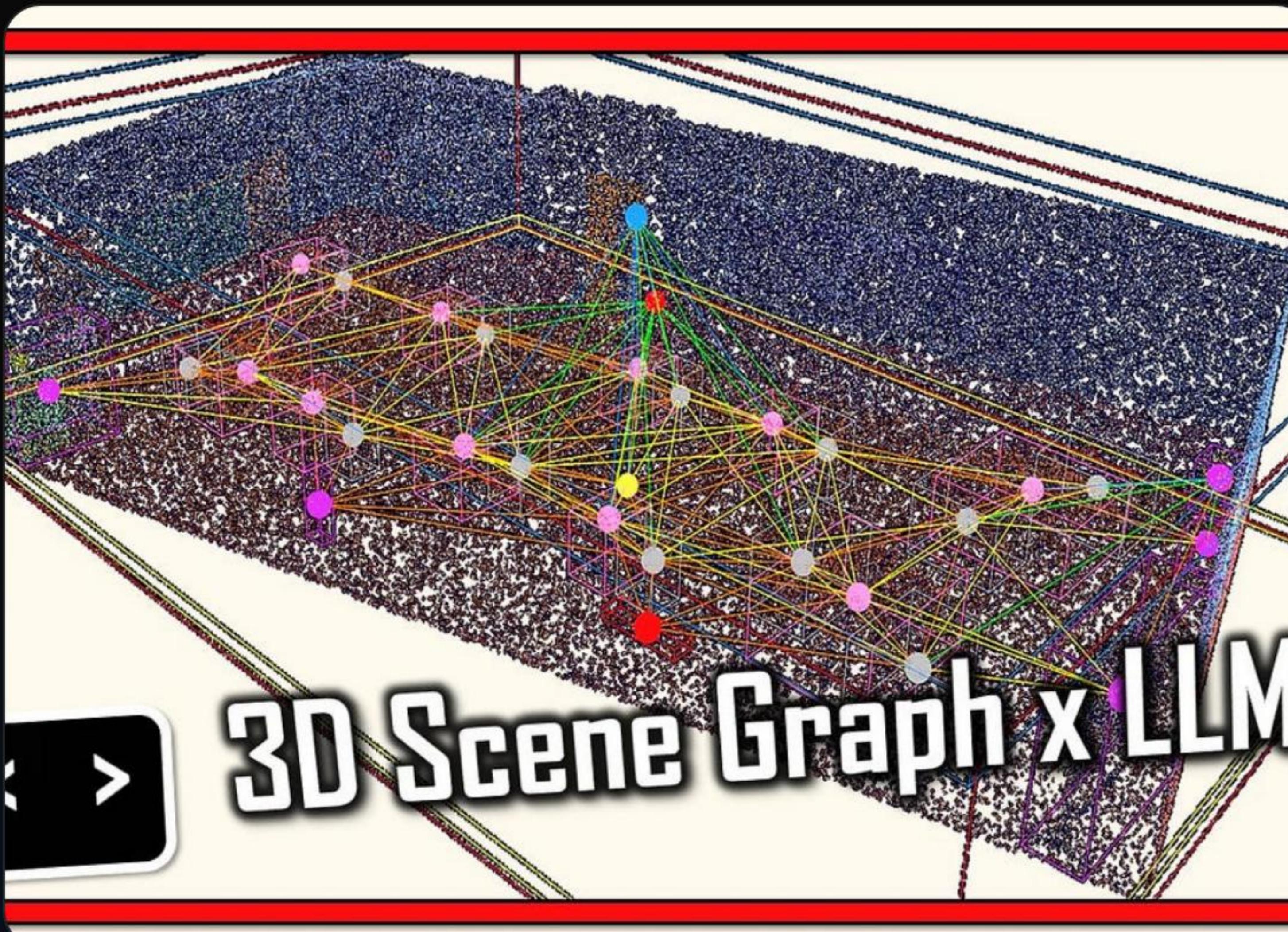
Identified a major bottleneck: "Repository Noise." Stale branches and inactive Pull Requests were slowing down VCS operations.

Impact: 100% Manual Task Reduction

Systematic identifying, labeling, and closing of stale PRs automatically.



Phase 2: The Standardization Crisis



Before UnifiedCI: Fragmentation

As teams grew, we faced "Pipeline Chaos":

X No Consistency

Every project had a different Jenkinsfile logic.

X High Maintenance

Bug fixes required updating 50+ individual project scripts.

X Quality Gaps

Important security/linting gates were often skipped.

UnifiedCI: The Scalability Hub



Standard Templates

Pre-built blueprints for Java, Python, and React projects.



Centralized Logic

One single source of truth (Shared Library) for all pipeline steps.



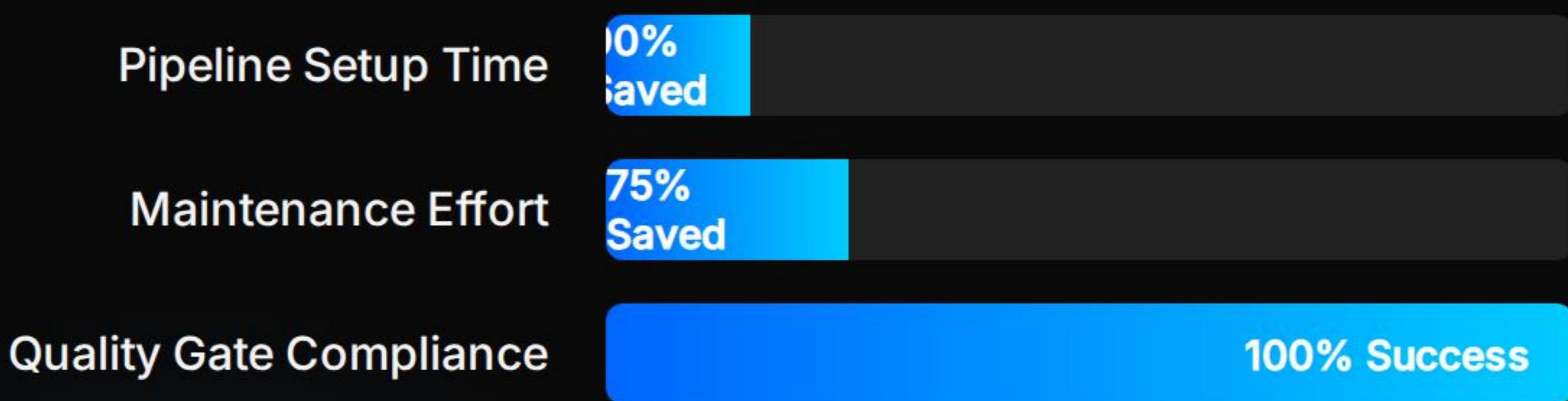
Auto-Compliance

Linting, Unit Tests, and Allure Reporting baked in by default.

"Moving from 300 lines of per-project code to 5 lines of configuration."

HINT: Use the word "Architectural Integrity." Explain that this is how Sony scales without breaking.

Impact: Quantifiable Results



Metric Comparison: Traditional vs UnifiedCI Framework



85%

DEVELOPER OVERHEAD REDUCED

Phase 3: Scaling to Mobile

Android CI/CD Ecosystem

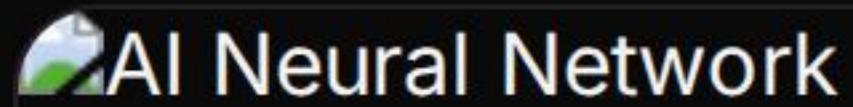
Expanding the Shared Library to the mobile world. We standardized the Android build lifecycle:

- ❑ Gradle Build Variants Automation
- ❑ Secure Keystore Management
- ❑ Firebase App Distribution Integration



HINT: Mention that mobile teams now have the same "Speed of Delivery" as our backend teams.

Phase 4: The Intelligent Pipeline



AI/ML Driven Diagnostics

The future of CI/CD is not just running jobs, but *understanding* them. My POC focused on Predictive Analysis:

Log Analysis using MCP

System analyzes gigabytes of build logs to identify the **Root Cause** of failures automatically, suggesting fixes to developers instantly.

Objective: Reduce MTTR by 60%

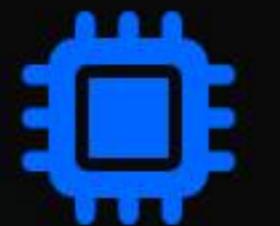
Global Impact & Vision

Aligning with Sony Tech Goals

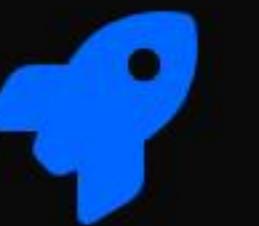
This work contributes directly to Sony's core engineering objectives:



Global Standardization



Efficiency at Scale



Rapid Innovation



| Key Learnings & Professional Growth

Technical Depth

Advanced mastery of Groovy, Kubernetes orchestration, and Cloud Native architecture patterns.

System Thinking

Learning how to build solutions that serve 100+ developers without creating new bottlenecks.

Agile Leadership

Communicating complex tech infrastructure to stakeholders at a Director and Executive level.



Thank You

Questions & Feedback

Manprit Singh Panesar | SISC Internship Review

Engineering Infrastructure & Automation Team

Thank You

TECHNOLOGY POWERPOINT PRESENTATION

Image Sources



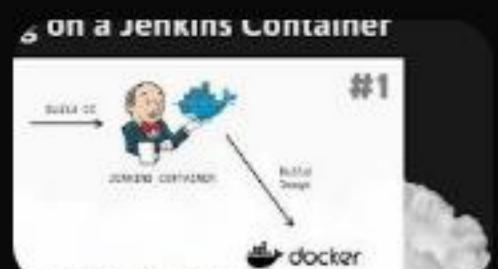
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Image Sources



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