

Driving Software Lifecycle with Taxonomy

Unveiling the Power of Data Taxonomy in Achieving Comprehensive
Software Lifecycle Telemetry at Broadcom

Agenda

1. Introduction
2. Broadcom Overview
3. Industry Challenge – Data Taxonomy
4. Software Telemetry - DevOps, SecOps, FinOps
5. Live Demo
6. Q & A

Our Speakers



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Technology Leadership in
Semiconductor and Infrastructure
Software Solution

Extensive Portfolio of **Innovative**
and **Differentiated** Products

Robust Business and Financial
Models Driving **Diversified** and
Sustainable Revenue

“Over 99% of all Internet traffic crosses at least **one** Broadcom chip”



Software: Enterprise Class Solutions

Mainframe



Distributed



Cybersecurity



Identity Management



Payment Security



Endpoint Security



Network,
Information and
Email Security



Endpoint Security
Identity & Access
Management



DevOps



ValueOps



AIOps



Data
Management

Enterprise Challenges

Untapped insights using 360 view



Missing “Shift-left” security



Less focus on Industry metrics/measurements



DataOps is evolving



Lacks unified visibility across DevOps tools for holistic analysis

Security is an afterthought rather than integrated with development life cycle

Missing industry standards like DORA to measure efficiency and identify improvements

Lack of skills and tool for data pipeline observability and auto remediation

Semi-automated / manual cloud governance



Proactive cost optimization is missing



Slow innovation



Kubernetes Day 2 problems



Lack of governance in cloud environments leading to idle and waste resources

Focus on cost visibility and optimization is reactive

Inadequate AI/ML on operational data for optimum efficiency

Lack of standard operation processes and automation to manage Kubernetes operations



Operational Efficiency



Cost implications



Poor Quality



Innovation

Foundational Issue – Data Taxonomy

Taxonomy comes from the Greek τάξις, *taxis* (meaning “order,” “arrangement”) and νόμος, *nomos* (“law” or “science”).

Data taxonomy provides a framework for understanding how different types of data are related. It's then used to improve decision-making, strengthen the customer experience, and minimize costs.

Broadcom's Challenges:

- ✓ Legacy
- ✓ Every acquisition brings new processes, tools and their own legacy
- ✓ Harmonizing data across business types and processes is a herculean task
- ✓ Buy-in of all stakeholders

<https://www.nielsen.com/insights/2019/why-you-need-a-data-taxonomy/>

<https://www.marinsoftware.com/blog/data-taxonomy-best-practices>

Foundational Issue – Data Taxonomy

Implementing a Taxonomy Framework yields synergistic advantages across DevOps, SecOps, and FinOps, fostering organizational excellence:



Enhanced Data Accuracy:

- DevOps: Ensures precise tracking of deployments and workflows.
- SecOps: Accurate categorization of security incidents and vulnerabilities.
- FinOps: Precise financial data for cost control.



Cross-Functional Insights

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Streamlined Reporting:

- DevOps: Consistent metrics simplify performance analysis.
- SecOps: Standardized reporting expedites incident response.
- FinOps: Reliable financial reports aid in cost optimization.



Efficient Data Retrieval

- DevOps: Quick access to deployment and release data accelerates improvements.
- SecOps: Speedy retrieval of threat data enhances incident investigations.
- FinOps: Rapid access to expenditure and budget data expedites financial decision-making.



Optimized Resource Allocation

- Efficient resource management for deployments.
- SecOps: Proactive threat mitigation reduces potential financial impacts.
- FinOps: Precise financial categorization enables cost control and budget allocation.



Improved Collaboration

- DevOps, SecOps, and FinOps teams collaborate effectively.
- Shared responsibility for security, performance, and cost management.

In conclusion, a Taxonomy Framework provides a unified approach to data organization, reporting, and analysis, delivering comprehensive insights, accuracy, and efficiency across DevOps, SecOps, and FinOps. This holistic perspective empowers organizations to make informed decisions, optimize operations, and enhance overall performance while fostering collaboration among critical teams.

Software Lifecycle End to End Data Analysis

A unified telemetry framework enables efficient data management, reporting, and analysis. Empowers stakeholders at all levels with actionable insights. Drives organizational success through optimized operations, reduced risks, and informed decisions.

Framework Overview

Unified system for collecting, categorizing, and analyzing data across the software lifecycle. Encompasses DevOps, SecOps, and FinOps domains. Empowers teams from executives to engineers with actionable insights.

Stakeholder Benefits

Executives

- ✓ Enhanced Decision-Making
- ✓ Holistic view of the software lifecycle
- ✓ Strategic alignment
- ✓ Financial Optimization

Managers

- ✓ Product optimizations/enhancements (CI/CD-DORA)
- ✓ Cross-domain insights
- ✓ Streamlined operations
- ✓ Proactive risk mitigation
- ✓ Streamlines operations
- ✓ Direct visibility into product run cost

Engineers

- ✓ Code development/deployment correlation with vulnerability
- ✓ Cost management

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Actionable Dashboard Highlights

Structured Data Visualization

- ✓ Taxonomy framework organizes data for easy interpretation.

Customized Views

- ✓ Tailored views for each stakeholder group (Executives, Managers, Engineers).

Real-Time Metrics

- ✓ Continuously updated telemetry data for timely actions

Actionable Insights

- ✓ Clear indicators of areas needing attention or optimization

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Simple to understand Use Cases

Executive View

- ✓ Monitor software delivery performance
- ✓ Assess financial efficiency and adherence to budget
- ✓ Align software initiatives with strategic goals

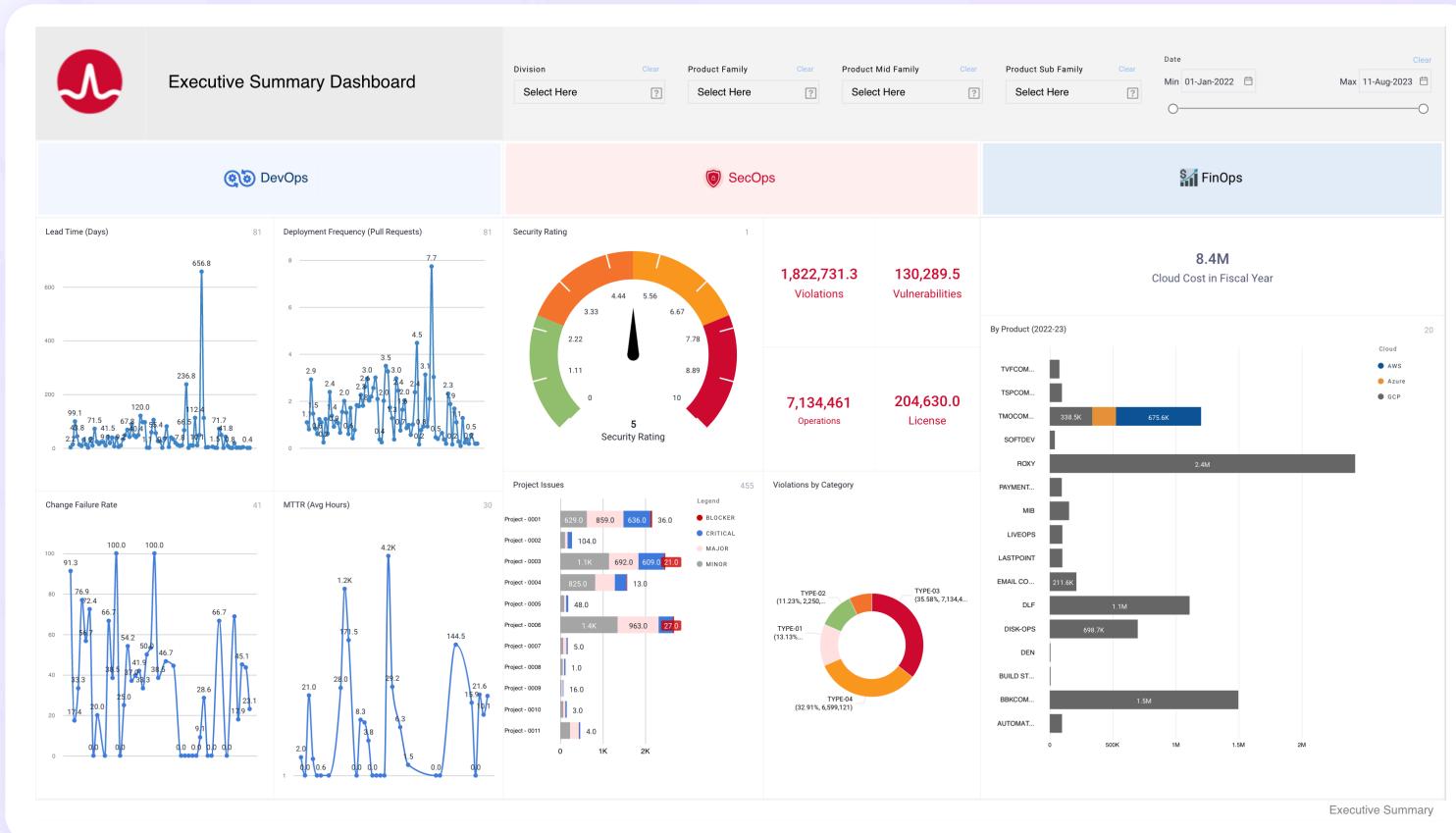
Manager View

- ✓ Track team productivity and operational efficiency
- ✓ Identify security threats and vulnerabilities
- ✓ Optimize resource allocation and cost control

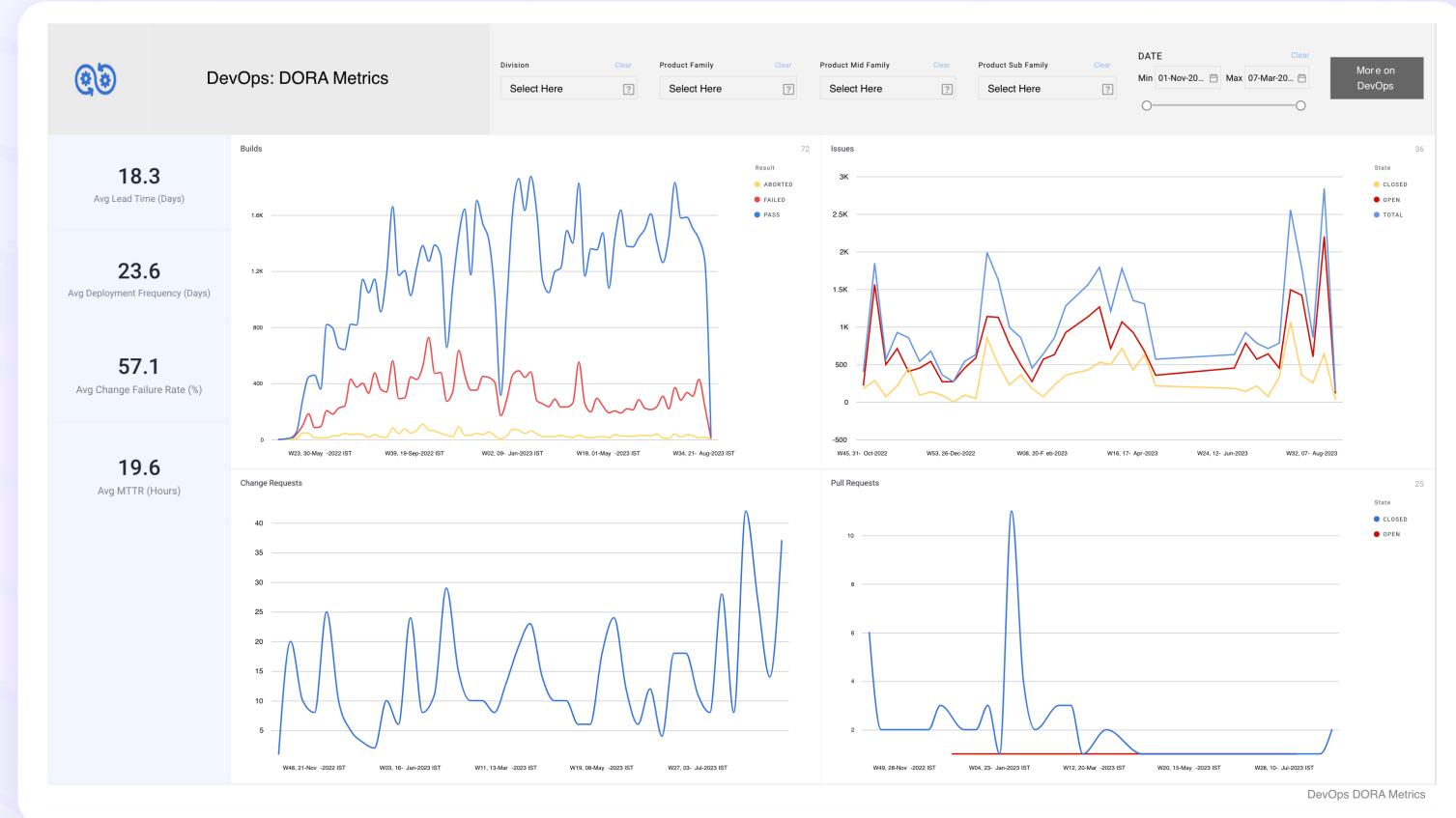
Engineer View

- ✓ Monitor software deployment and release metrics
- ✓ Investigate performance issues and incident
- ✓ Make data-driven decisions for code optimization

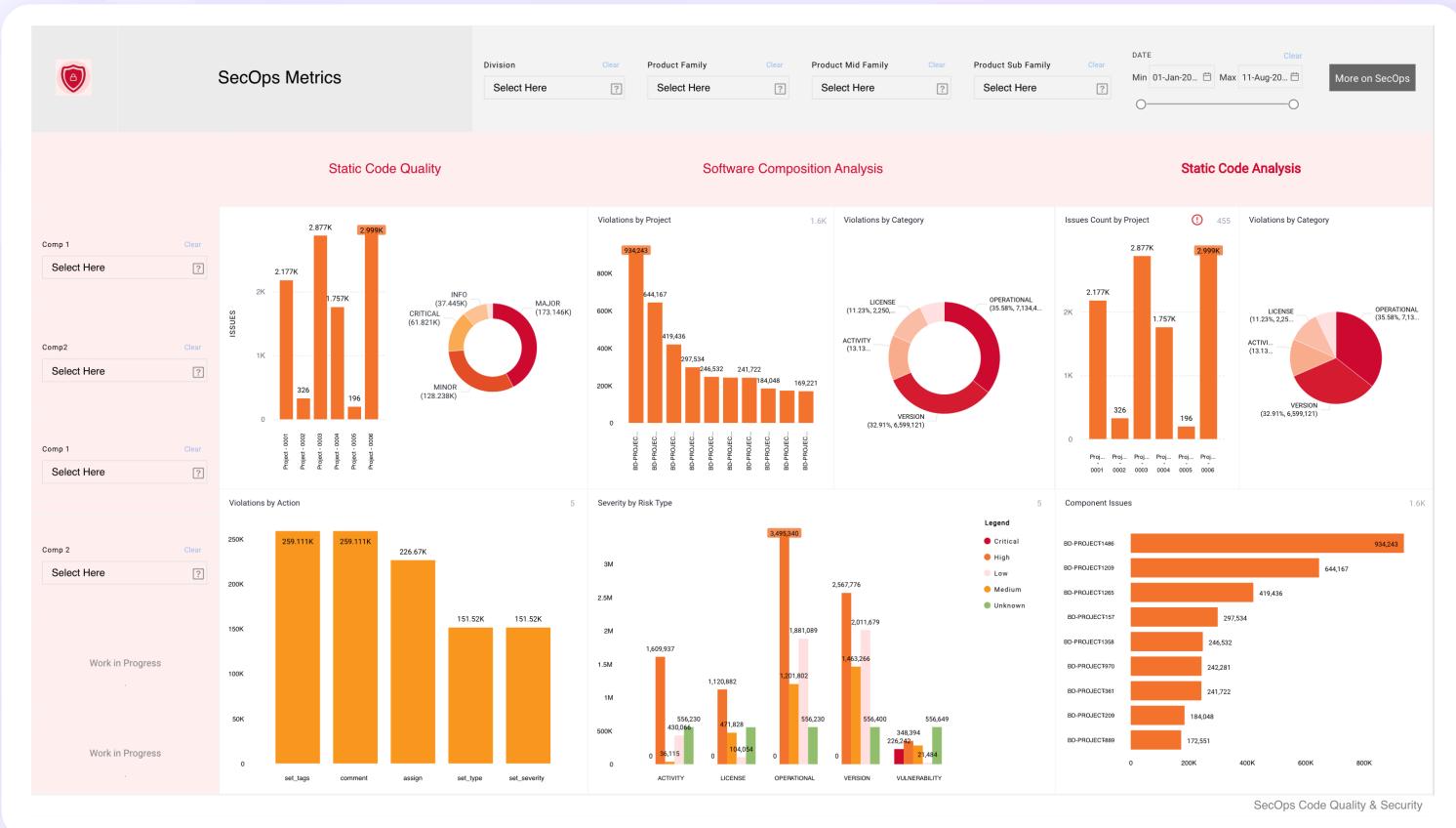
Executive View



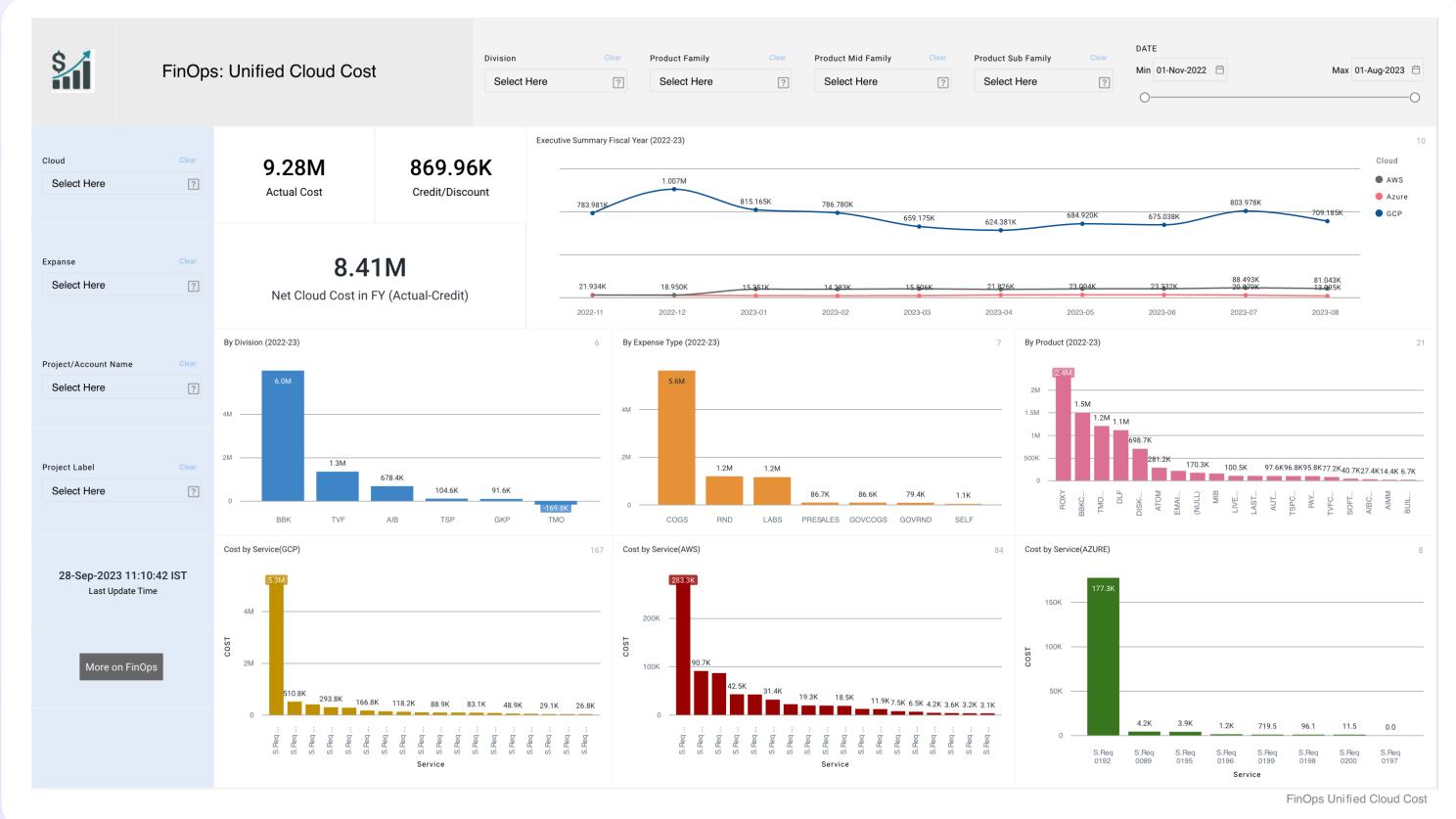
DevOps Telemetry



SecOps Telemetry



FinOps Telemetry



Live Demo

First and only data-to-outcome platform

Data at Scale → Collection → Transformation → Insights → Predictions → Recommendations → Actions → Outcomes

No-code

ML-powered

Unified user experience

CAPABILITIES

Data Integration

- Ingestion
- ETL
- ELT
- Reverse ETL
- CDC

Machine Learning

- Exploratory Data Analysis
- Data Preparation
- Datasets
- Model training

Analytics and Insights

- Interactive visualisation
- Storyboarding
- Predictions
- Recommendations

Process Automation

- Workflow
- Orchestration
- Alerts and actions
- Writeback

XOPS SOLUTIONS



FinOps



DevOps



DataOps



CloudOps



MLOps



ALM



HR



Marketing



Sales



Customer Success

BUSINESS SOLUTIONS

Q & A

Thank you

In the ever-evolving landscape of software development, the pursuit of excellence hinges on a delicate yet transformative element: data taxonomy. Join us as we embark on a journey that showcases how Broadcom harnesses the Klera (now Gathr) software analytics and workflow engine in conjunction with a meticulous taxonomy framework to revolutionize its software development paradigm. Through this synergy, we have attained unparalleled visibility spanning the entire software lifecycle – from the genesis of code to the realms of security analysis, cloud cost optimization, and beyond.

Data taxonomy, often regarded as the cornerstone of a structured organization, emerges as the driving force behind our success. In the dynamic realms of DevOps, SecOps, and FinOps, where collaboration and clarity are paramount, a well-defined taxonomy becomes the conduit that seamlessly binds diverse operational facets. Gathr emerges as the catalyst that transforms taxonomy from a theoretical construct into an operational powerhouse, enabling us to bridge the chasms that separate Development, Security, and Financial Operations – the trifecta of modern software prowess.

This presentation delves into the transformative prowess of data taxonomy-driven software lifecycle telemetry. We unveil how taxonomy serves as the thread that weaves together intricate workflows, harmonizing processes, and establishing clear communication channels among teams responsible for coding, security validation, and financial forecasting. Our narrative showcases how the marriage of taxonomy and Gathr expedites development lifecycles while enhancing the security integrity of our applications through continuous code scrutiny and vulnerability assessments. Beyond this, we illuminate how taxonomy-driven insights extend to the financial dimension, offering real-time cost analysis and optimization avenues.

By embracing this approach, organizations unlock the ability to:

Elevate Visibility: Achieve holistic insight across the software lifecycle via meticulously crafted taxonomies that categorize and contextualize each phase.

Cultivate Collaboration: Foster cross-functional collaboration by providing teams with a shared taxonomy-based language, enabling seamless communication across DevOps, SecOps, and FinOps domains.

Enhance Security: Leverage taxonomy-driven processes to ensure code security through consistent vulnerability assessments and targeted remediation.

Optimize Costs: Utilize taxonomy as the foundation for real-time financial assessments, empowering teams to make informed decisions and allocate resources optimally.

In an era where software excellence is inseparable from streamlined interdepartmental coordination, taxonomy emerges as the unifying element that propels innovation, mitigates risk, and maximizes efficiency. This presentation lays bare the transformative potency of Gathr's software analytics and workflow engine in tandem with a taxonomy-driven approach. Embark with us on this expedition to unravel the power of taxonomy – the linchpin that has redefined software lifecycle telemetry.

Summary