2025 Tourism Day Summit

POCONO MOUNTAINS™ VISITORS BUREAU

BREAKOUT SESSION 1C

The Poconos Data Journey: Harnessing AI and AWS to Attract the Next Wave of Visitors

Presented by

Patrick Stewart, Tyler Sanders, & Raman Kadariya
Red Oak Strategic

RED OAK strategic

The Poconos Data Journey:

Harnessing AI and AWS to Attract the Next Wave of Visitors

aws PARTNER Advanced Tier Services

- AWS Glue Delivery
- Amazon Redshift Delivery

Meet the Red Oak Strategic Team

Patrick Stewart: Chief Revenue Officer

Tyler Sanders: Head of Engineering

Raman Kadariya: Solutions Architect

ROS

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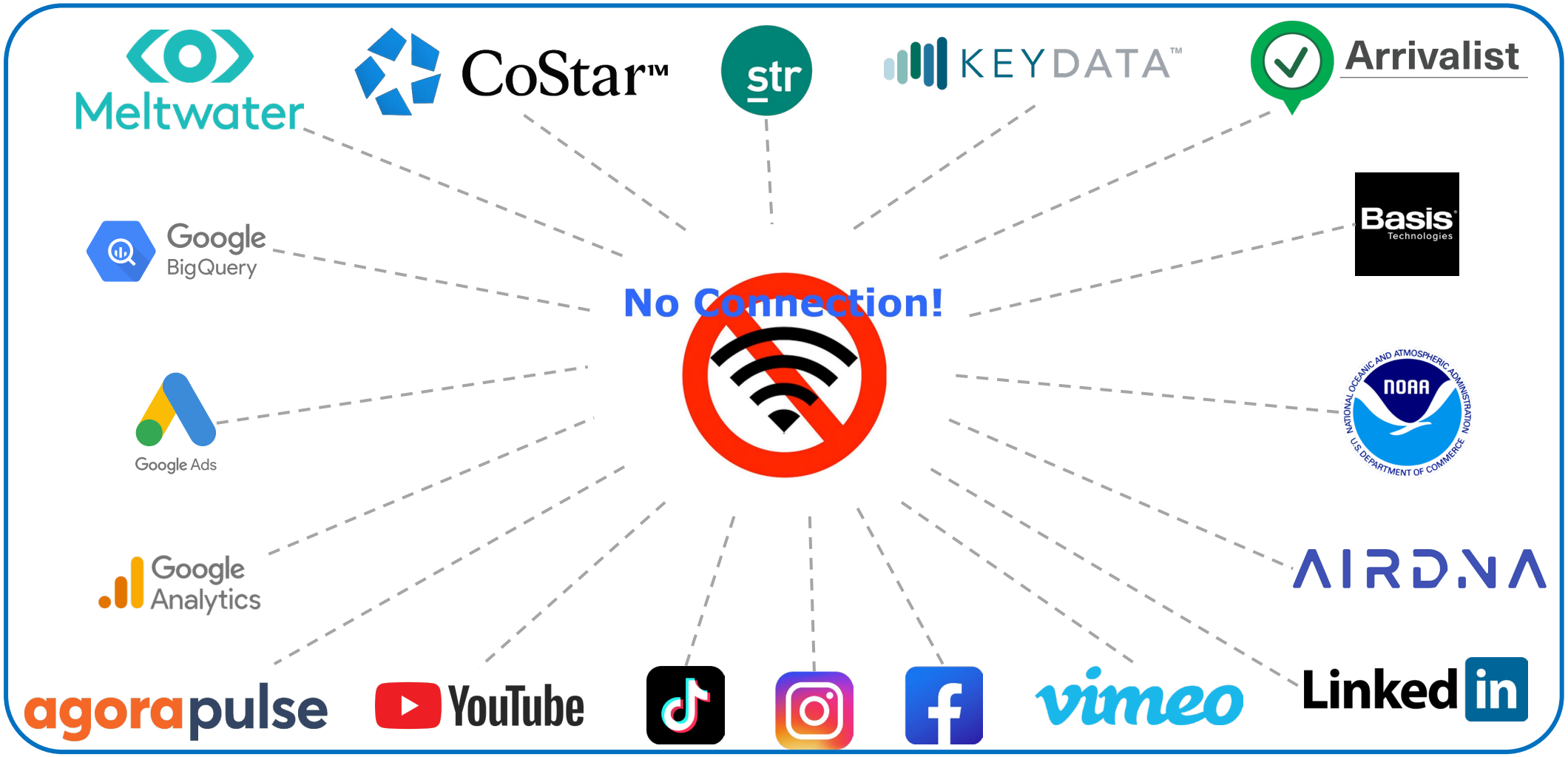
PMVB Data Lake Project Overview

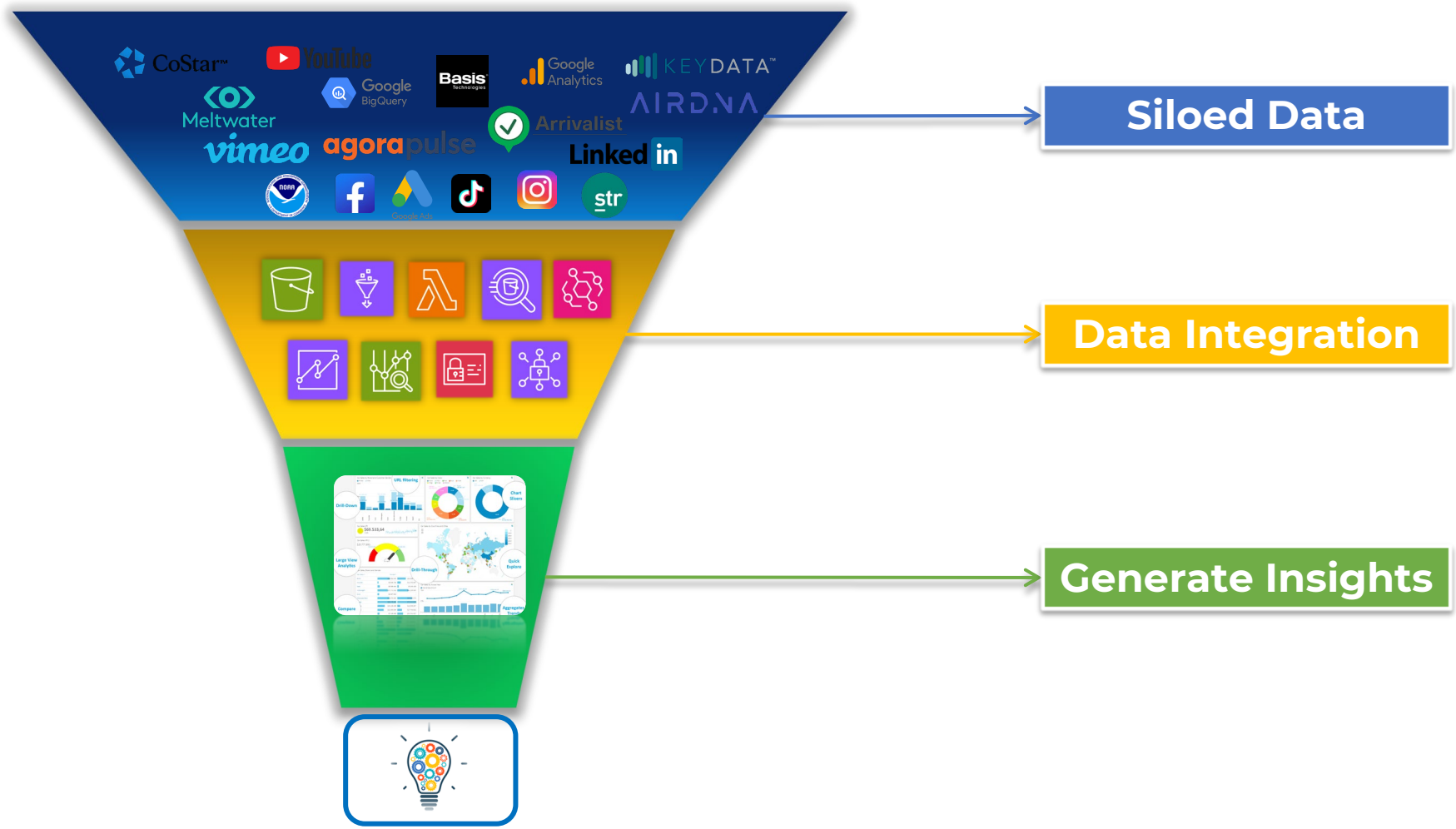
The **Pocono Mountains Visitors Bureau** (PMVB) collects data from more than 18 sources to help measure how marketing and outreach is driving tourism. **Red Oak Strategic** (ROS), a cloud and data analytics firm is supporting this mission by **centralizing these data sources**, onboarding critical new data sources through **strategic partnerships** and **secure data sharing**. Using modern cloud technologies, AI, and intelligent data solutions, we aim to **transform how data informs decisions across the Poconos region.**

Disconnected Sources, Missed Opportunities

PMVB faced challenges with disparate data sources and lacked a **centralized data lake** to **unify and connect insights** across tourism, marketing, social, and economic data.



Unifying Sources to Unlock Insights



Automated ETL process with **AWS services**, delivering high quality, clean, trusted datasets that fuel **SQL querying**, interactive **QuickSight dashboards**, and **Q data storytelling**

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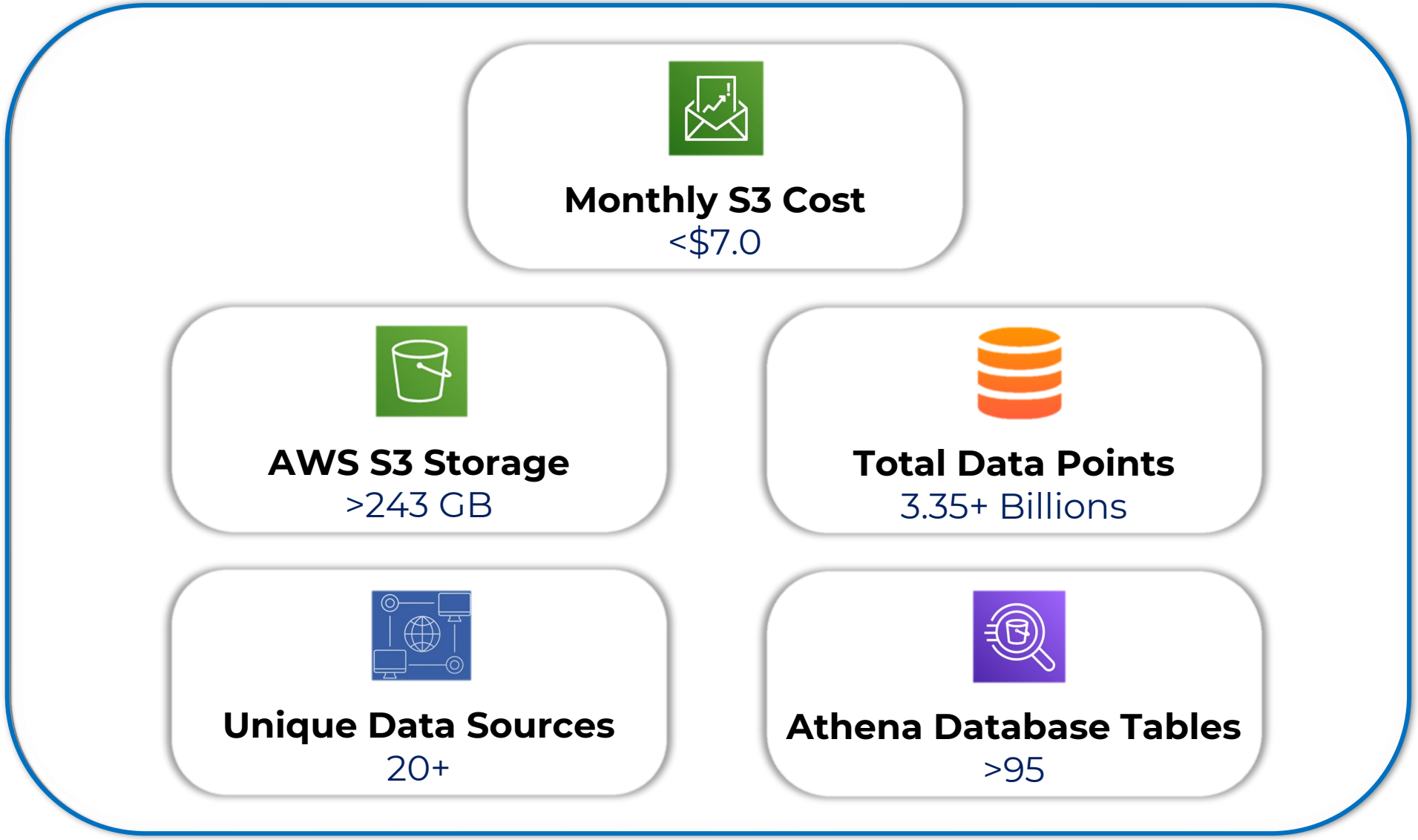
What We've Accomplished Together



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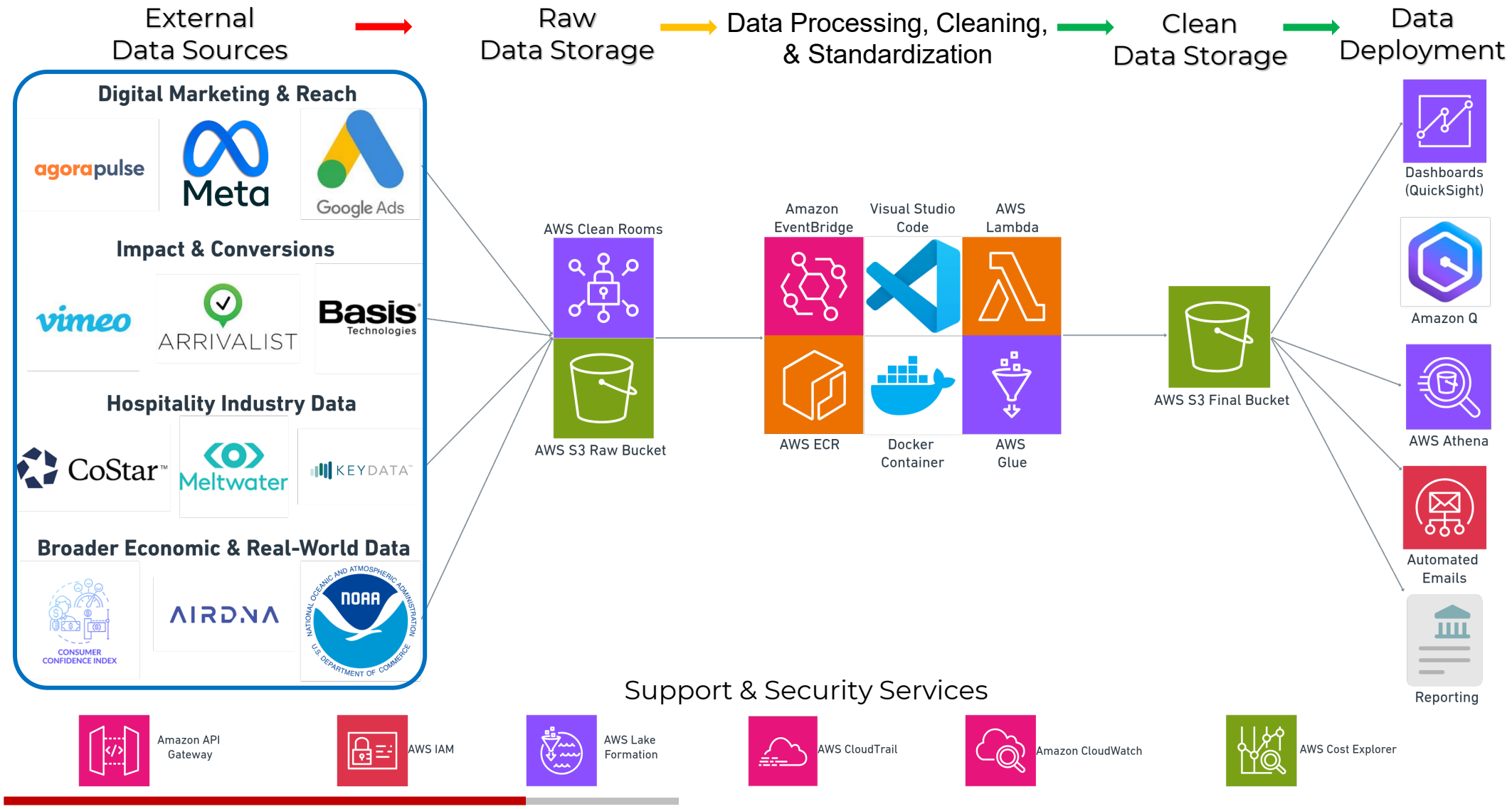
Data Lake Architecture & Roadmap



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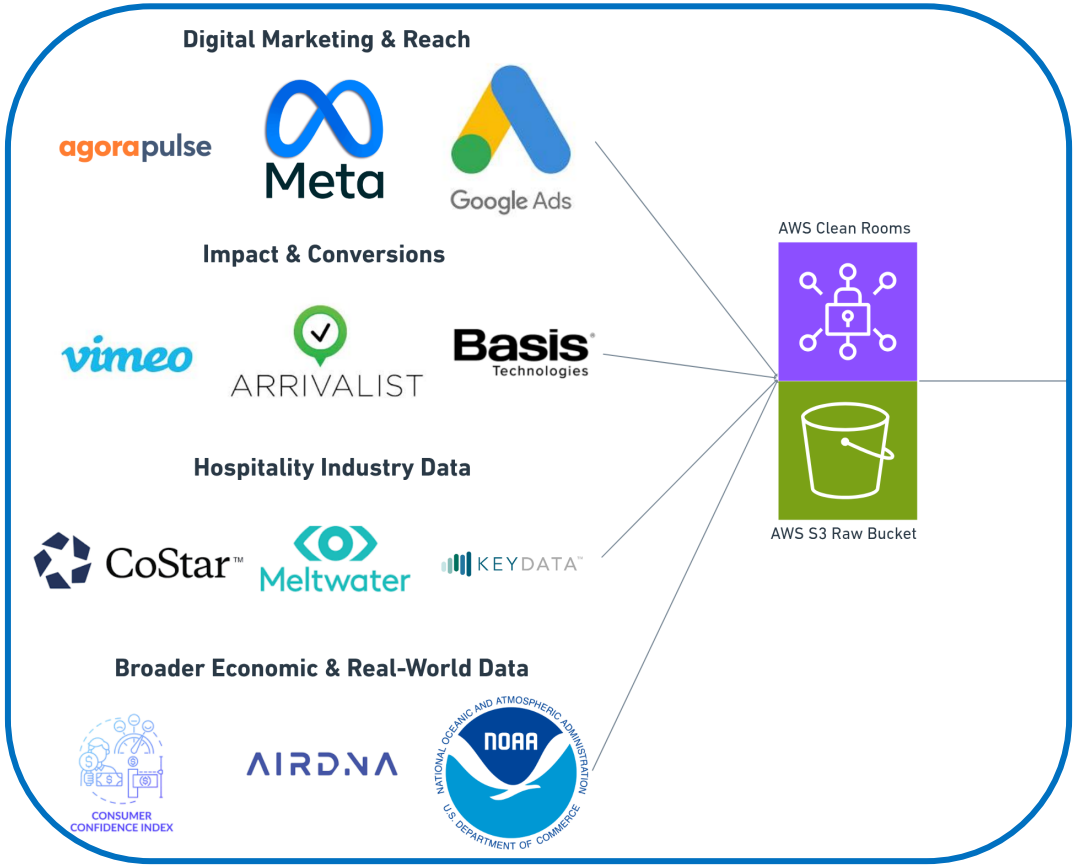
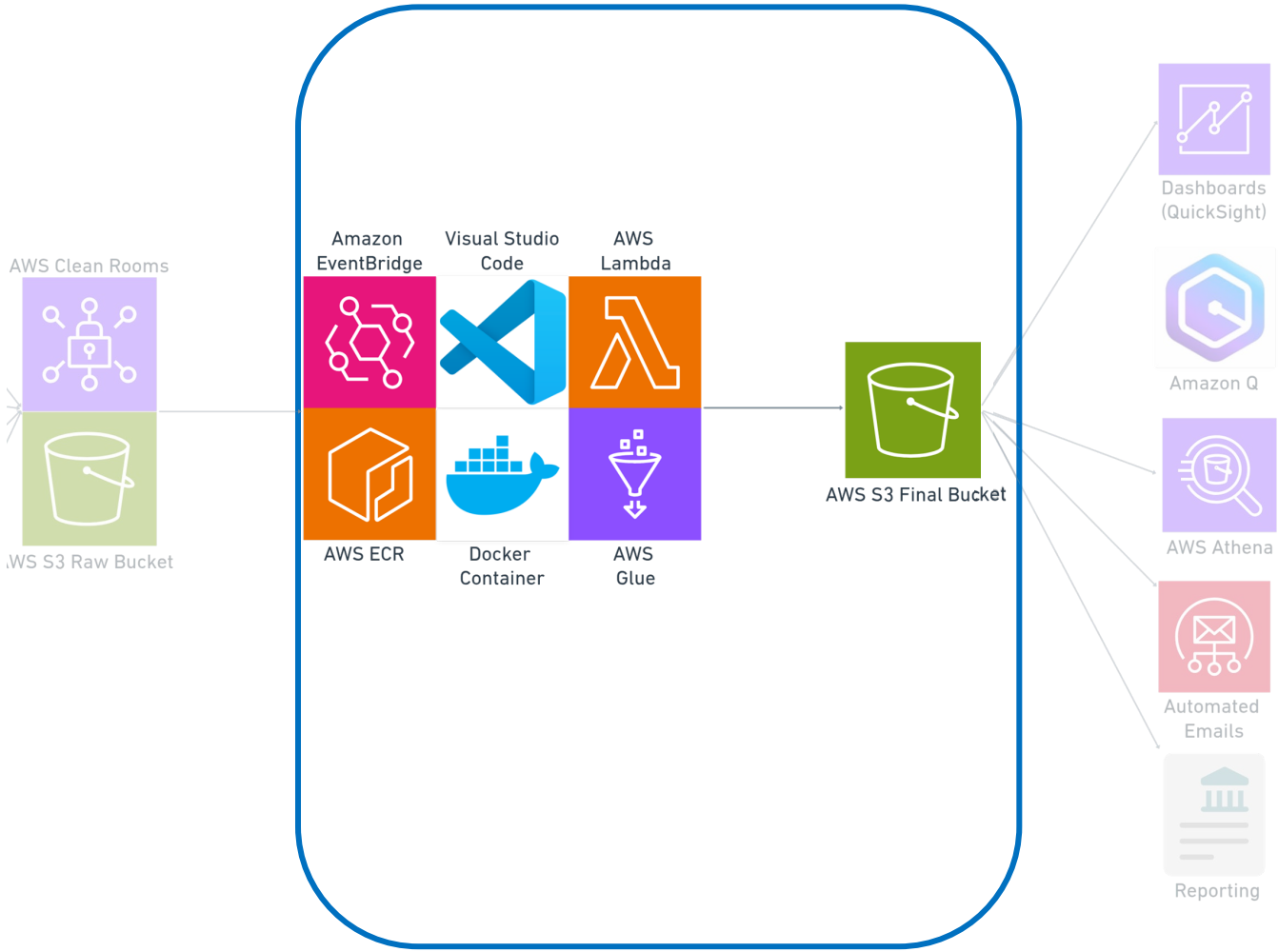
Raw & Sensitive Data Processing



- **Ingest** : APIs, SFTP, Emails, direct Amazon S3 drops
- **Storage** : Amazon S3

Data Cleaning & Standardization

- **Clean & Standardize**: AWS Lambda containers + Pandas
- **Catalog & Secure**: AWS Glue and AWS Lake Formation
- **Query & Analyze**: Amazon Athena



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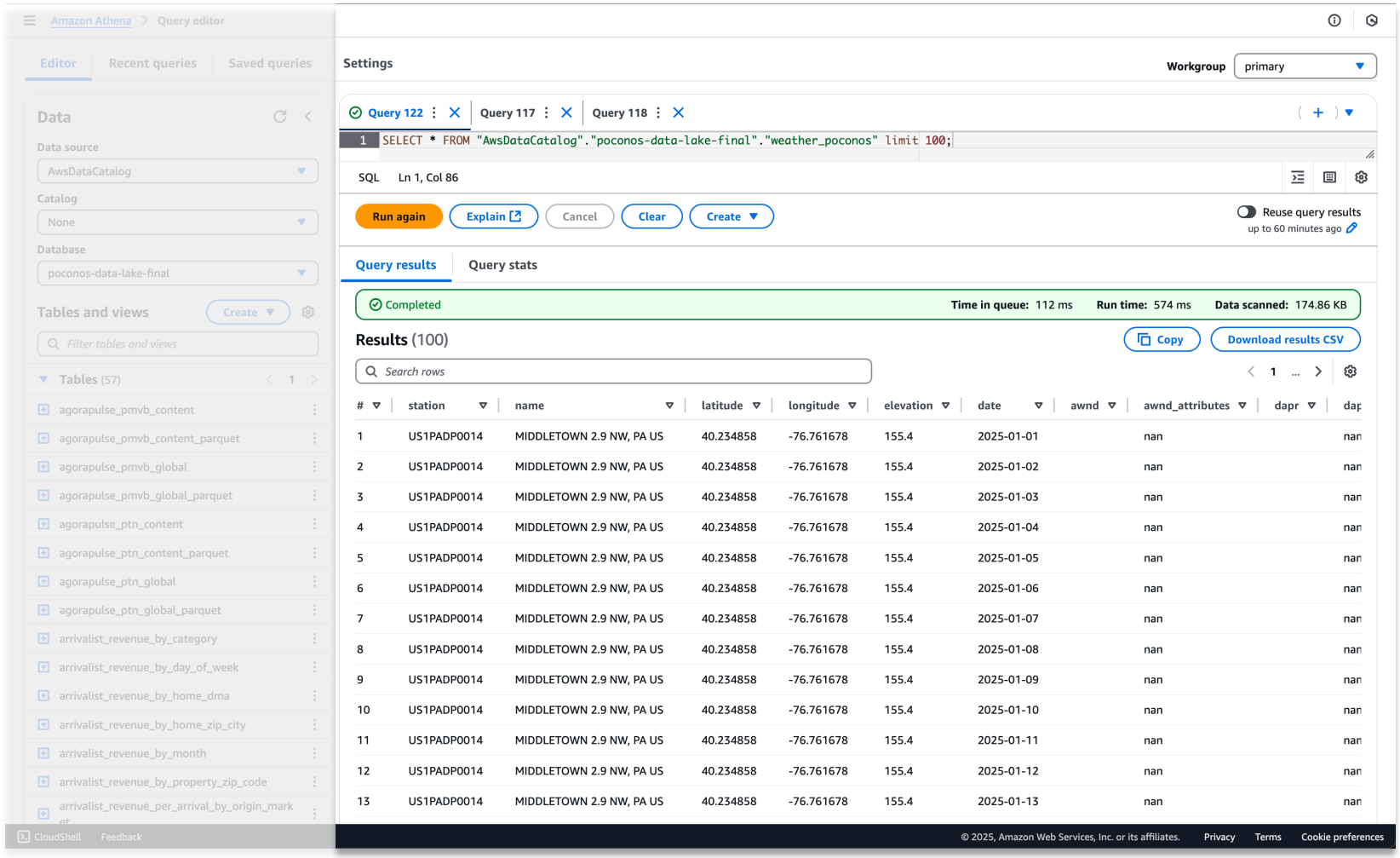
Amazon Athena Querying



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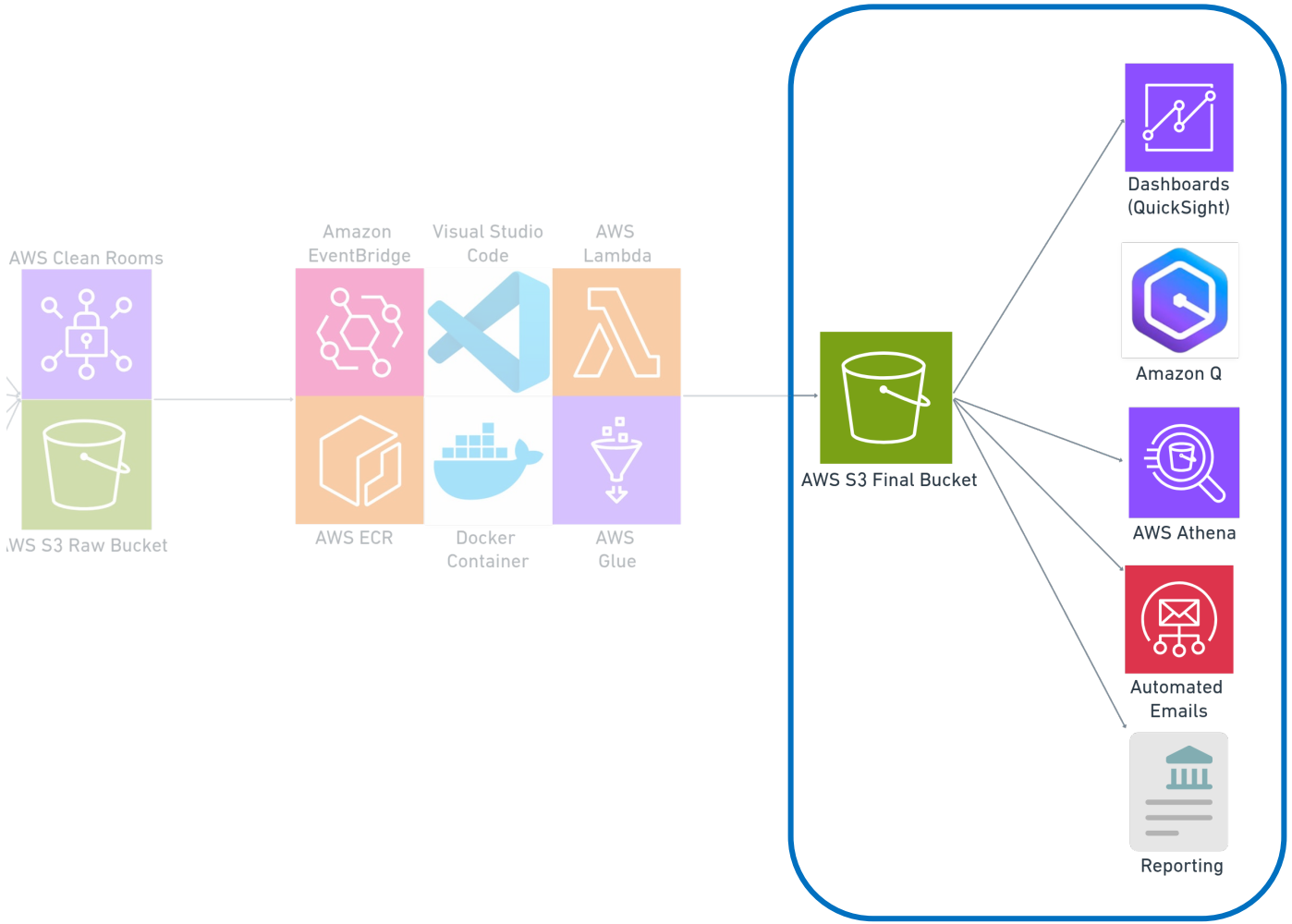
Data Visualization & Gen AI

- **Visualize & Report**:
  Amazon QuickSight
  Amazon Q Data Story



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Unified Data Sources in Action

ROS is developing an embedded **dynamic AWS QuickSight dashboard** into PMVB website, providing continuously refreshed tourism and marketing performance insights to stakeholders.

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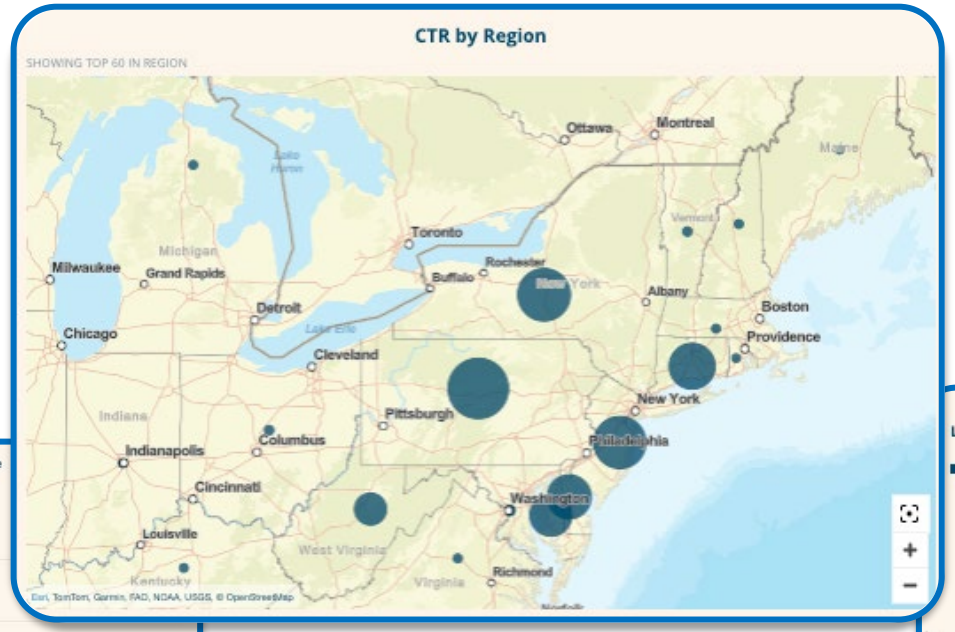
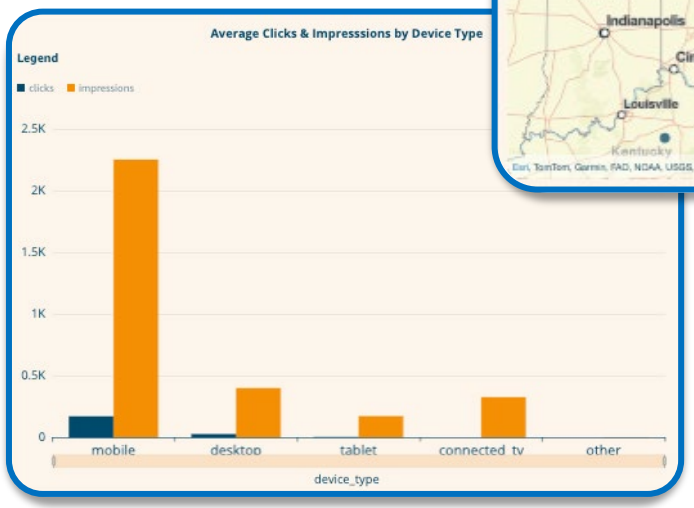
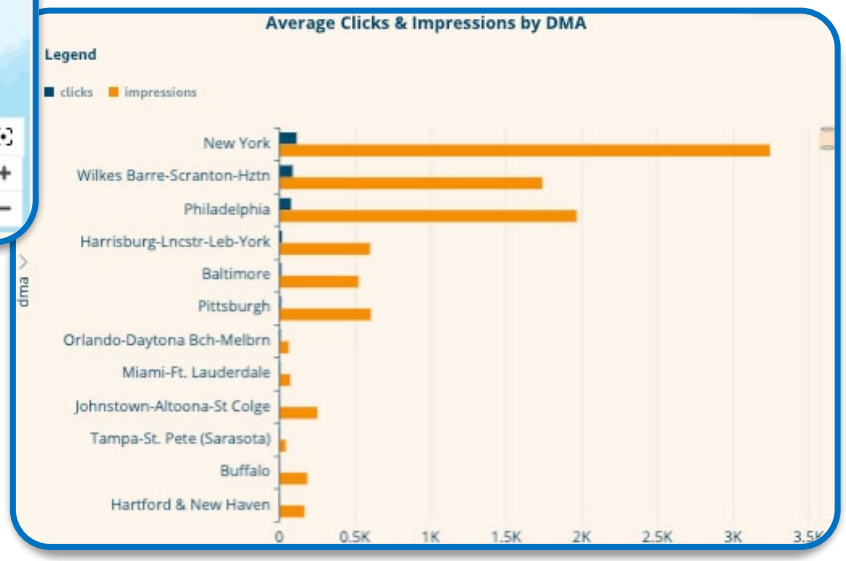
Resort Occupancy Trends







By integrating structured, unstructured, and semi-structured data from diverse sources - we are enabling **PMVB** decision makers to **gain deeper insights, streamlined access, and improved collaboration opportunities.**

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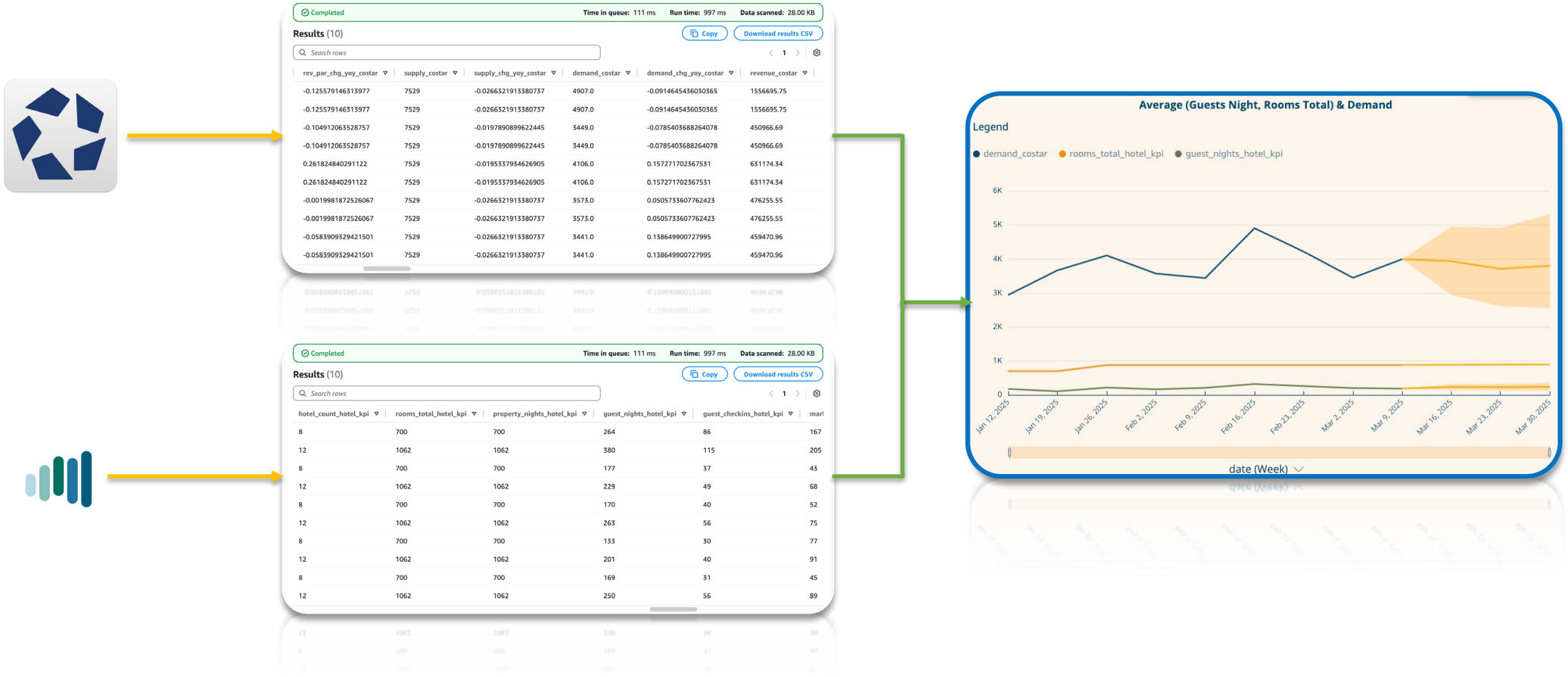
Empowering Faster, Smarter Decision-Making



Equipping leadership with integrated, **accurate data** for visualization, **forecasting**, and strategic decision making.

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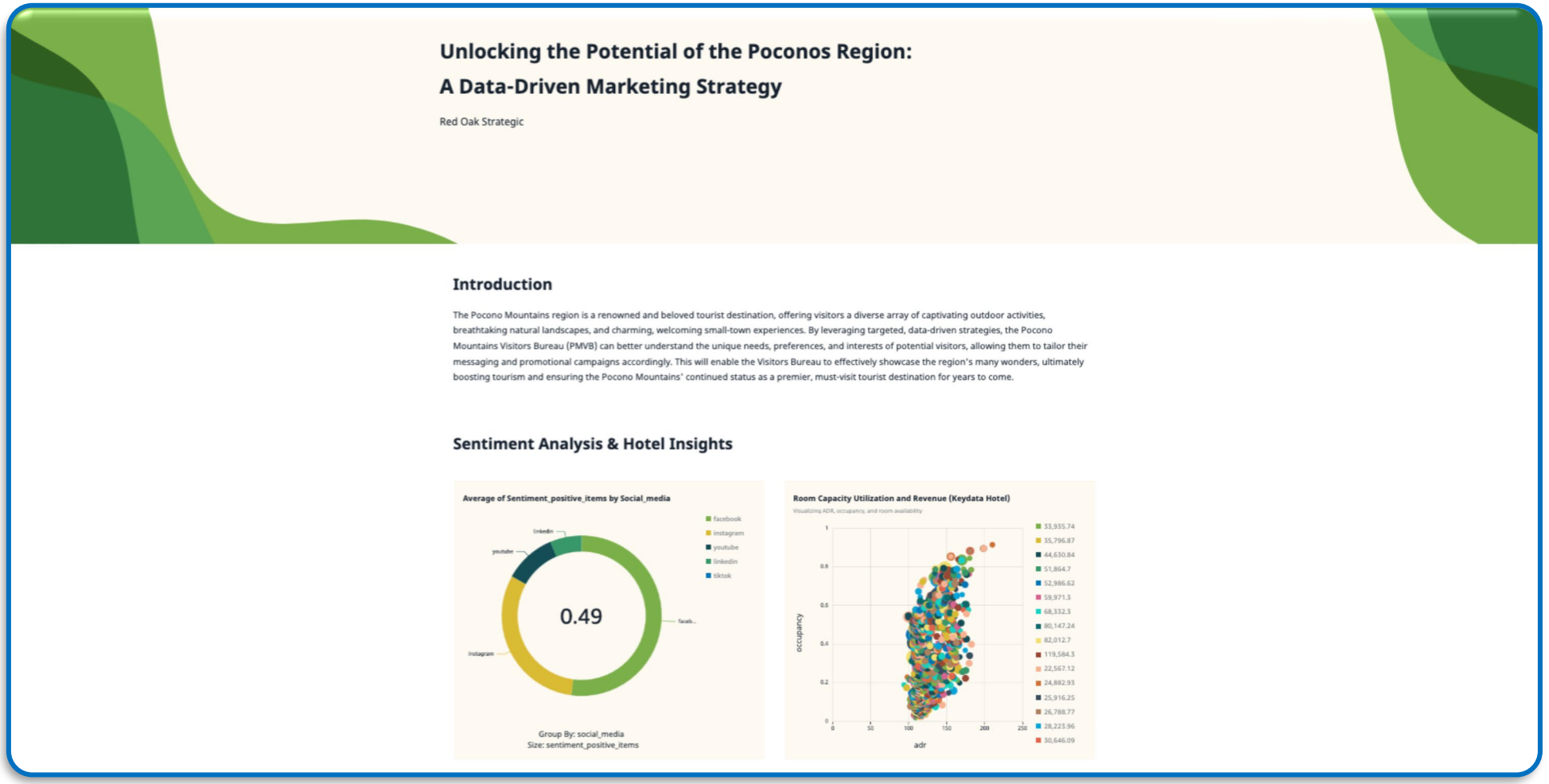
Gen AI-Powered Reporting



Unlocking the Potential of the Poconos Region:
A Data-Driven Marketing Strategy

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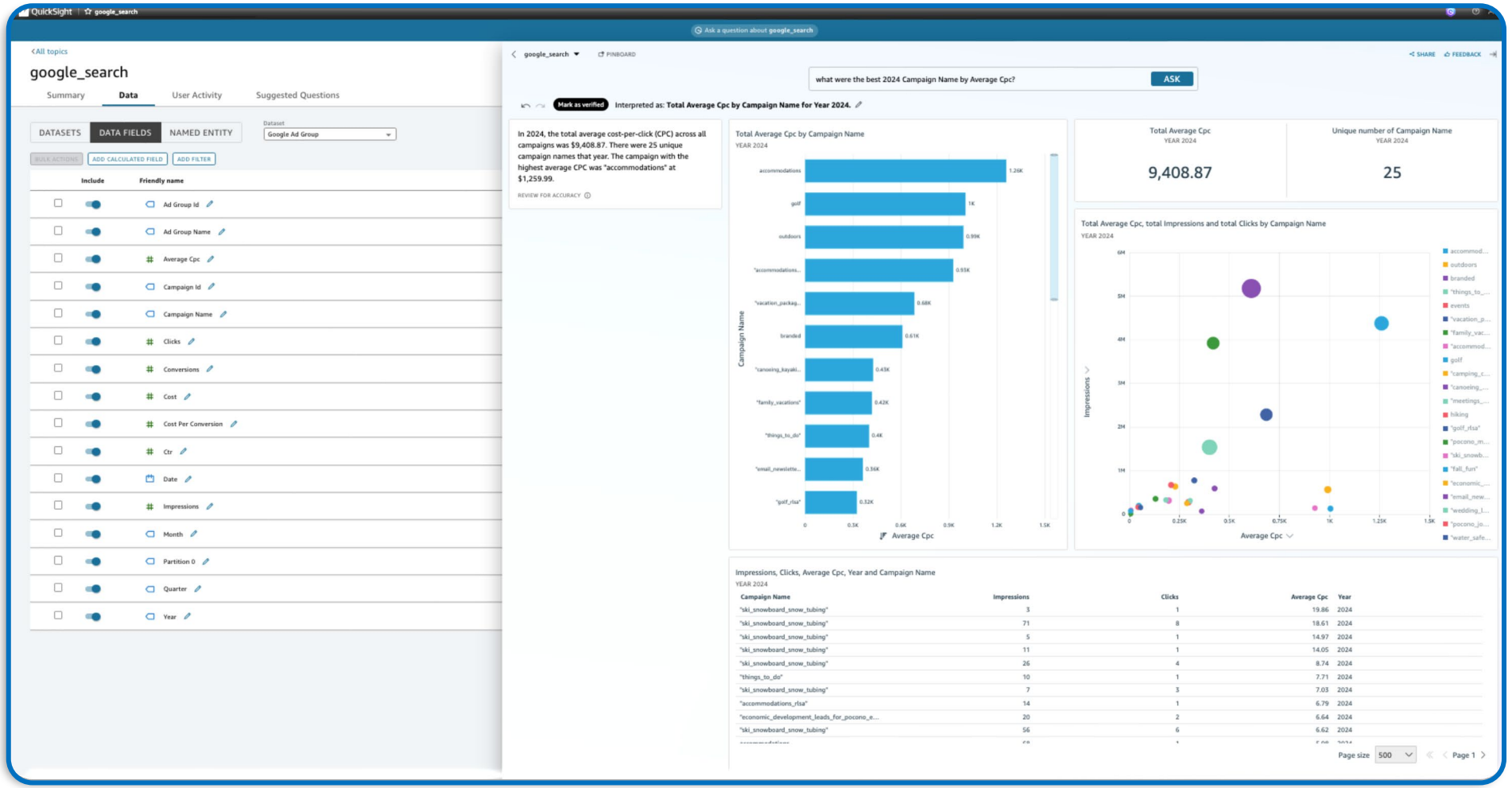
Introduction

The Pocono Mountains region is a renowned and beloved tourist destination, offering visitors a diverse array of captivating outdoor activities, breathtaking natural landscapes, and charming, welcoming small-town experiences. By leveraging targeted, data-driven strategies, the Pocono Mountains Visitors Bureau (PMVB) can better understand the unique needs, preferences, and interests of potential visitors, allowing them to tailor their messaging and promotional campaigns accordingly. This will enable the Visitors Bureau to effectively showcase the region's many wonders, ultimately boosting tourism and ensuring the Pocono Mountains' continued status as a premier, must-visit tourist destination for years to come.

Sentiment Analysis & Hotel Insights

Leveraging **Amazon Q** to deliver automated, natural language narratives and **AI-driven insights**, making complex data accessible and actionable for broader audiences

Gen AI-Powered Search



Leveraging **Amazon Q Topic** to deliver dynamic, natural language search and **AI-driven insights**, making complex data accessible and actionable for broader audiences

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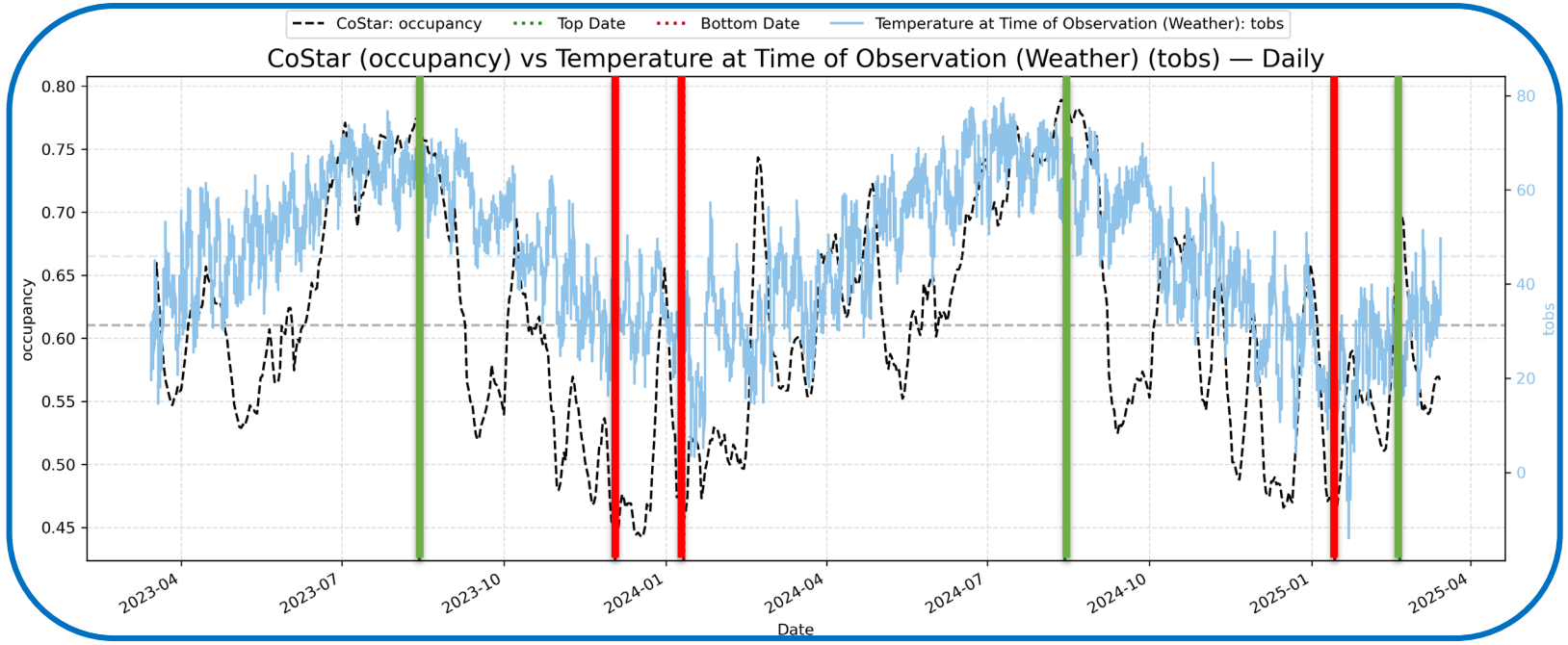
Advanced Analytics & Visualization



CoStar Occupancy exhibits a clear seasonal pattern that closely aligns with **TOBS Temperature** trends, reinforcing **weather** as a key driver of tourism demand

- **Green lines** represent peak occupancy days. These align with warm-weather periods
- **Red lines** mark the lowest occupancy dates, which consistently occur in the coldest months

Weather Trends can help Poconos anticipate and plan for peak vs. off-peak demand while supporting data-driven marketing and pricing strategies

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Building a Secure, Privacy-First Data Strategy

By integrating external data sources, the project provides a **360° tourism view** and enables secure, **insight-driven collaboration without requiring** partners to share or relocate any **sensitive data**.

Collaborate with Confidence

Purchased Goods Supplier

Item	S3_Upstream_Purchased_Good	Unit	Origin_Region
Raw Material 1	14.41	kg co2e/unit	North America
Raw Material 2	43.67	kg co2e/unit	Europe
Raw Material 3	10.25	kg co2e/unit	Asia
Raw Material 4	8.99	kg co2e/unit	Asia
Raw Material 5	1.53	kg co2e/unit	North America

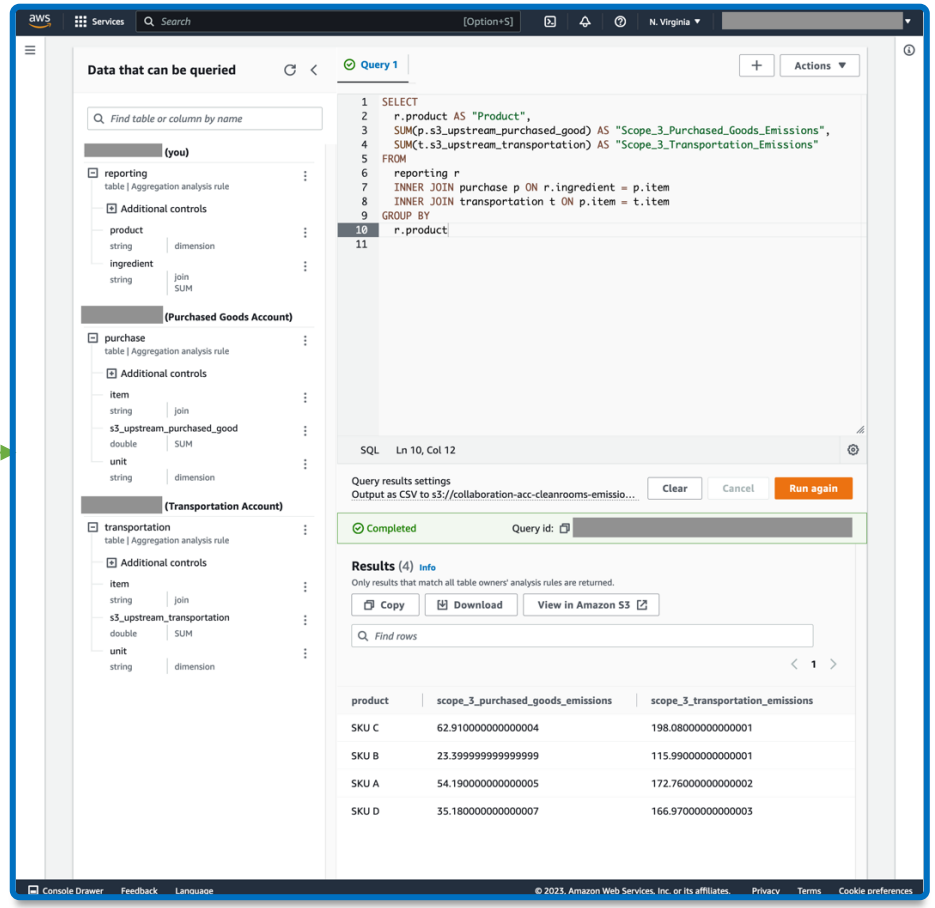
Transportation Provider

Item	S3_Upstream_Transportation	Unit	Transportation_Mode
Raw Material 1	21.62	kg co2e/unit	Van
Raw Material 2	65.56	kg co2e/unit	PANAMAX
Raw Material 3	38.15	kg co2e/unit	ULVC
Raw Material 4	94.37	kg co2e/unit	PANAMAX
Raw Material 5	12.83	kg co2e/unit	Semi-Trailer

Reporting Company

Product	Ingredient
SKU A	Raw Material 2
SKU A	Raw Material 4
SKU A	Raw Material 5
SKU B	Raw Material 1
SKU B	Raw Material 4
SKU C	Raw Material 2
SKU C	Raw Material 3
SKU C	Raw Material 4
SKU D	Raw Material 1
SKU D	Raw Material 3
SKU D	Raw Material 4
SKU D	Raw Material 5

AWS Clean Rooms



With addition of **AWS Clean Rooms**, Poconos partners can more easily and securely analyze and collaborate on their collective datasets - **without sharing or copying** each other's **underlying data**.

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Unlocking Next-Level Insights

- **Stays & Lodging Data →** Measure occupancy trends and revenue impact
- **Airline Bookings & Flight-Search Feeds →** Early demand signals
- **Streaming & Media Exposure →** Connect ad exposure to arrivals
- **Transportation & Mobility Data →** Optimize travel offers
- **Attraction & Events Ticketing →** Forecast visitor flows

*With **AWS Clean Rooms** your sensitive data never leaves your control**

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PMVB Data Lake Support & Security

- **Collaborate with AWS Clean Rooms:** Enable secure data collaboration across travel and hospitality brands - such as hotels, airlines, and restaurants - to unlock a unified view of travelers, enhance guest experiences, improve loyalty programs, and deliver dynamic, personalized offers.

- **Ensure Data Lake Security & Governance:** Implement robust access control, monitoring, and cost management using **API Gateway**, **Identity and Access Management (IAM)**, **AWS Lake Formation**, **CloudTrail**, **CloudWatch**, and **Cost Explorer** to secure and optimize the PMVB Data Lake environment.

Welcome To A More Connected Future

Red Oak Strategic aims to empower Poconos decision-makers and partners with **timely, actionable insights**; **foster deeper collaboration** across agencies, communities, and businesses, while **maximizing the long-term value** of Pocono's growing **data ecosystem**.

PMVB Dashboard & ROS Website

Red Oak Strategic Website

PMVB Quick Sight Dashboard

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THANK YOU!

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