
AWS
re:Invent

ANT217

Embedding analytics into applications with Amazon QuickSight

Jose Kunnackal John
Principal Product Manager
Amazon Web Services

Nicholas Hahn
VP, Product
Club OS

Latha Govada
Senior Manager, Analytics
Capital One

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Agenda

- The embedded analytics journey
- Why Amazon QuickSight
- What’s new in Amazon QuickSight
- Customer story: Club OS
- Customer story: Capital One

The embedded analytics journey: Why



Applications collect large amounts of data about transactions & interactions

Analysis of this data provides valuable insights on usage, behavior, and value derived

End users and administrators want to make data driven decisions

The embedded analytics journey: Benefits

Add analytics to your users' workflow

- Increase user engagement
- Create differentiation
- Upsell opportunities



Embedded analytics: Build vs buy

Build

Pros

- Leverages in-house resources available
- Perceived low-upfront risk
- Full control over what's built

Cons

- Requires specialized UI/UX resources
- Must maintain and evolve over time
- Replicating BI capabilities is challenging
- Re-architecting to scale with growth

Buy

Pros

- Faster time to market
  - Rich analytics out of the box
  - Updates handled by the vendor
- Focus your resources on core product

Cons

- Requires server management
  - Forecast, plan, and deploy BI servers
  - Scaling up/down is not dynamic
- Expensive with commits

Embedded analytics



Powered by Amazon QuickSight

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Why Amazon QuickSight



Cloud native = No servers = Auto-Scale

No servers or software to manage, maintain, deploy. Start with 10s of users and scale to 10s of 1000s



Fully integrated with AWS

Build end-to-end analytics in AWS. Secure private VPC access, fine-grained access control, ML integrations



Secure and global

End-to-end encryption. Native High Availability. 10 Global regions. HIPAA, PCI, ISO, SOC and FedRamp eligibility



Easy to develop and maintain

Design with Amazon QuickSight, integrate with APIs. Secure data with row-level security and authenticate seamlessly via single sign-on



Fast, consistent performance

Fast, predictable performance every time. Concurrent users or increased interactions do not slow down the system



ML insights

Contextual, relevant insights with ML-powered anomaly detection, forecasting, alerts and customizable narratives



Insights for everyone

Provide access to all users, pay only for usage. No upfront costs, no charges for inactive users



Customize and embed

Embed in applications and enable analytics in hours, not months or years. Use themes to match application/corporate branding

ADMINISTRATOR → *BENEFITS* → *END USER*

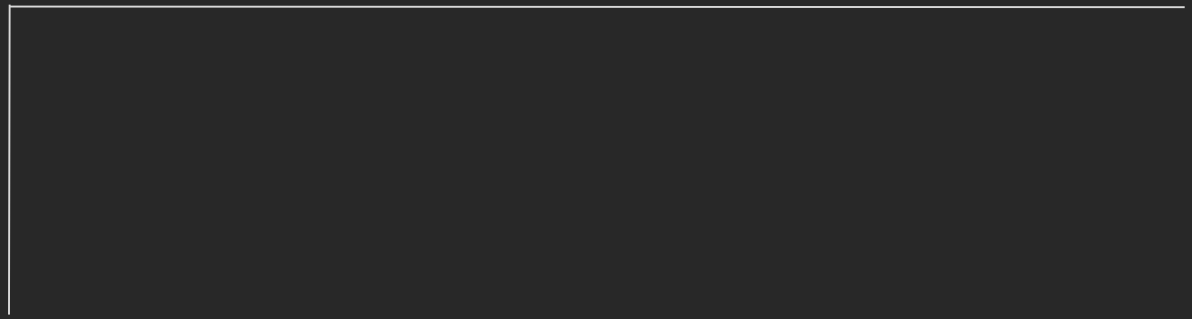
Auto-scale for fast, consistent performance

More concurrent users

More complex dashboards

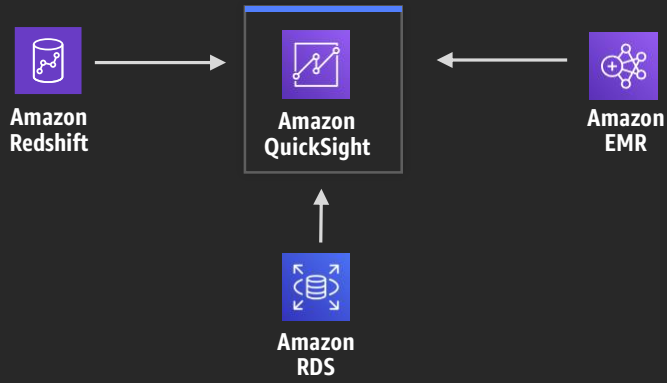
Geographic distribution

High Availability



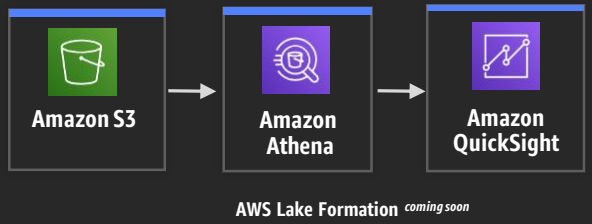
Freedom from servers

Better together: AWS + Amazon QuickSight



Private VPC connectivity = no public routing of data

Direct query to data sources or SPICE for fast access



Native fine-grained permissions for users with AWS Identity and Access Management (IAM)

Cost allocation by business unit or team

Create dashboards in minutes

Pay for what you use

Amazon QuickSight Enterprise Edition pricing

Authors



Create and publish interactive dashboards

$18

/user/month

Billed annually

$24/user/mo. paying month to month

Readers



Secure access to dashboards anytime, anywhere

$0.30 /session*

up to a max of

$5 /user/month

*session = 30 minutes from login

10 Regions with localization



And expanding..

Differentiate with natural language and ML



Auto narratives
Summarize your business metrics in plain language



Forecasting
Machine learning forecasting with point and click simplicity



Anomaly detection
Discover unexpected trends and outliers against millions of business metrics



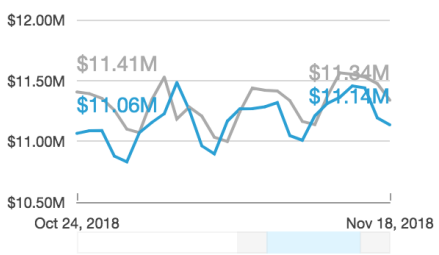
Preview

ML predictions
Visualize and build predictive dashboards with Amazon SageMaker models

ABCO Daily Sales Report

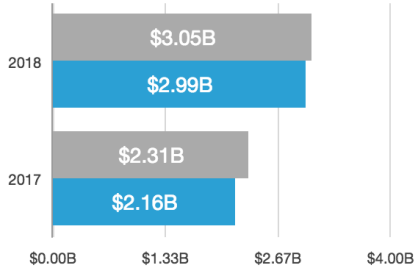
Daily Revenue

Daily revenue **decreased -0.51% (-$57,032.99)** on Nov 18, 2018, from $11.19M to $11.14M compared to the previous day and is **-1.78% (-$202,111.70) below** goal of $11.34M. We are **$2789.67K (0.334%) above** 30-day average revenue of $8.35M. We're operating at an **run rate of $4.06B.**



YTD Revenue

Year-to-date revenue **increased** by **61.95% ($1.14B)** from $1.85B to $2.99B compared to the same period last year and is **-1.81% ($55.03M) below** plan of $3.05B. We are at **98.19%** achievement of YTD goal and **84.61%** achievement for annual goal.

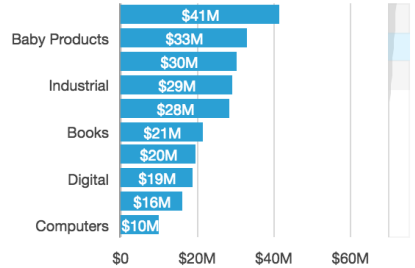


Callouts By Product and Country

Daily revenue for **Baby Products | Russia** on Nov 22, 2018 was **lower than expected** at $1,170.58

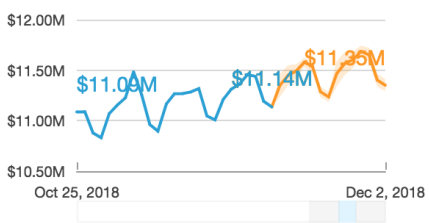
Callouts By Customers

Daily revenue for **MULTIDEL INC.** on Nov 22, 2018 was **higher than expected** at $60,433.95



Daily Revenue Forecast

Daily revenue is predicted to reach **$12.02M** by end of the year. We expect to exit the year with an annualized run rate of **$4.39B**. Total revenue for 2018 is predicted to reach $3.47B, **$63.06M (-1.78%) below** annual target of $3.54B.



Top / Bottom Movers by Product

Top daily revenue **increase** by products are:

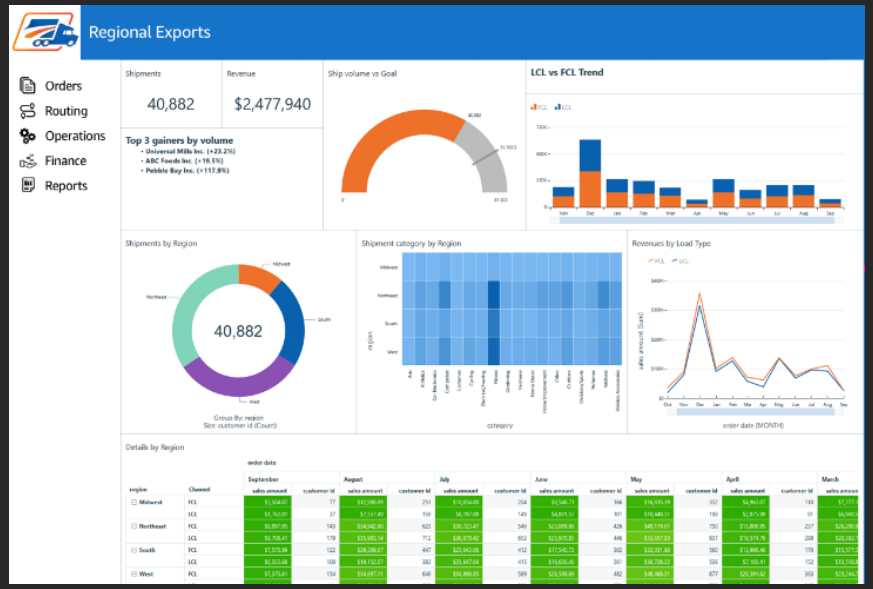
Top / Bottom to Plan Variance by Product

Top products **above** plan for today are:

Revenue by Product Category

Nov 18, 2018 | Nov 17, 2018

Embed Amazon QuickSight dashboards



Fully interactive with drill down, filtering, & external links

Personalized views with row-level security

No servers to manage, no long-term commitments

Pay for usage with pay-per-session reader pricing

Seamless authentication

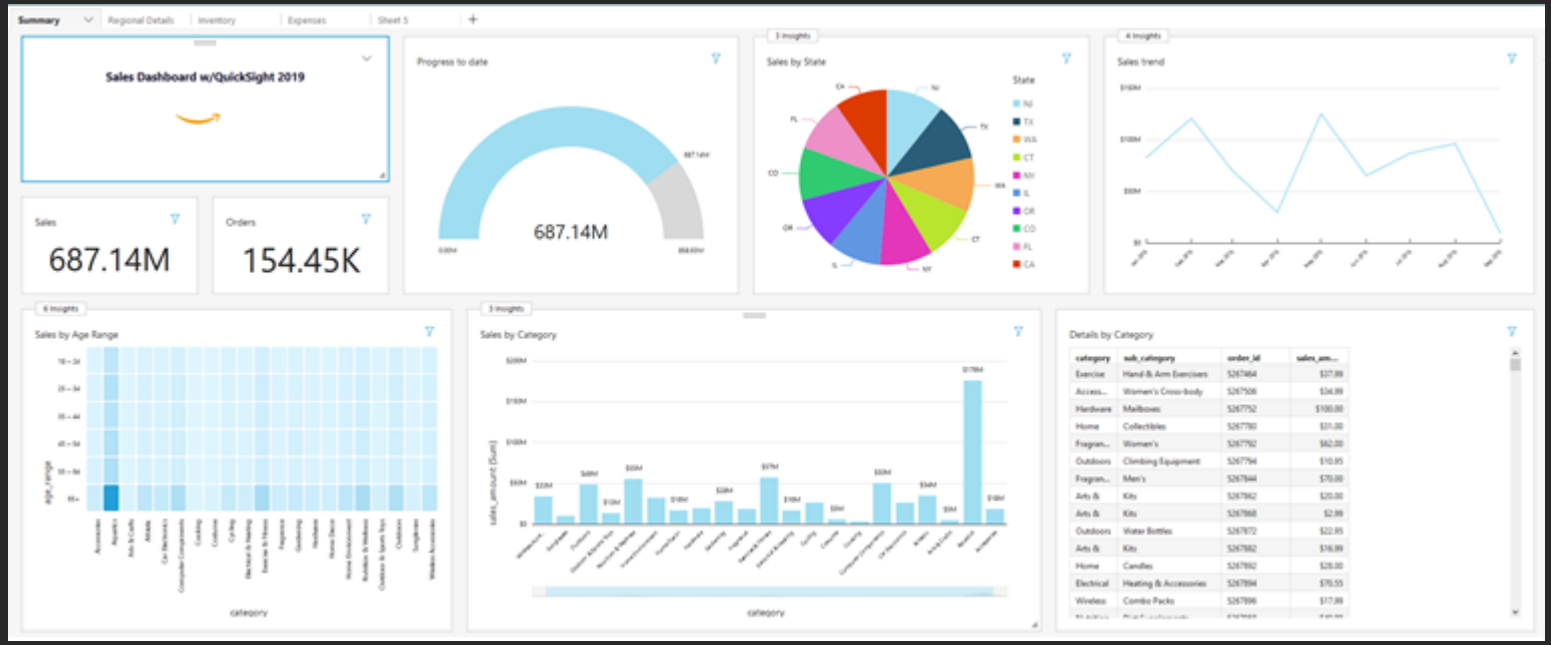
Embedded analytics: What's new



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What's new? Theming



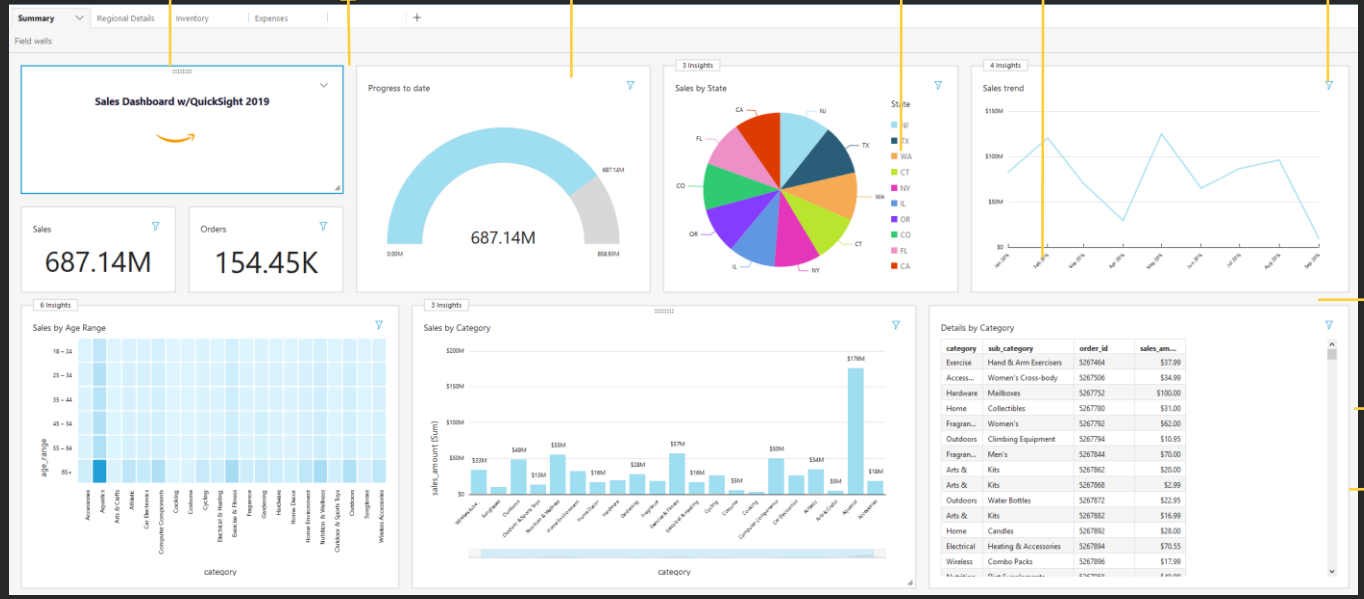
Seaside theme



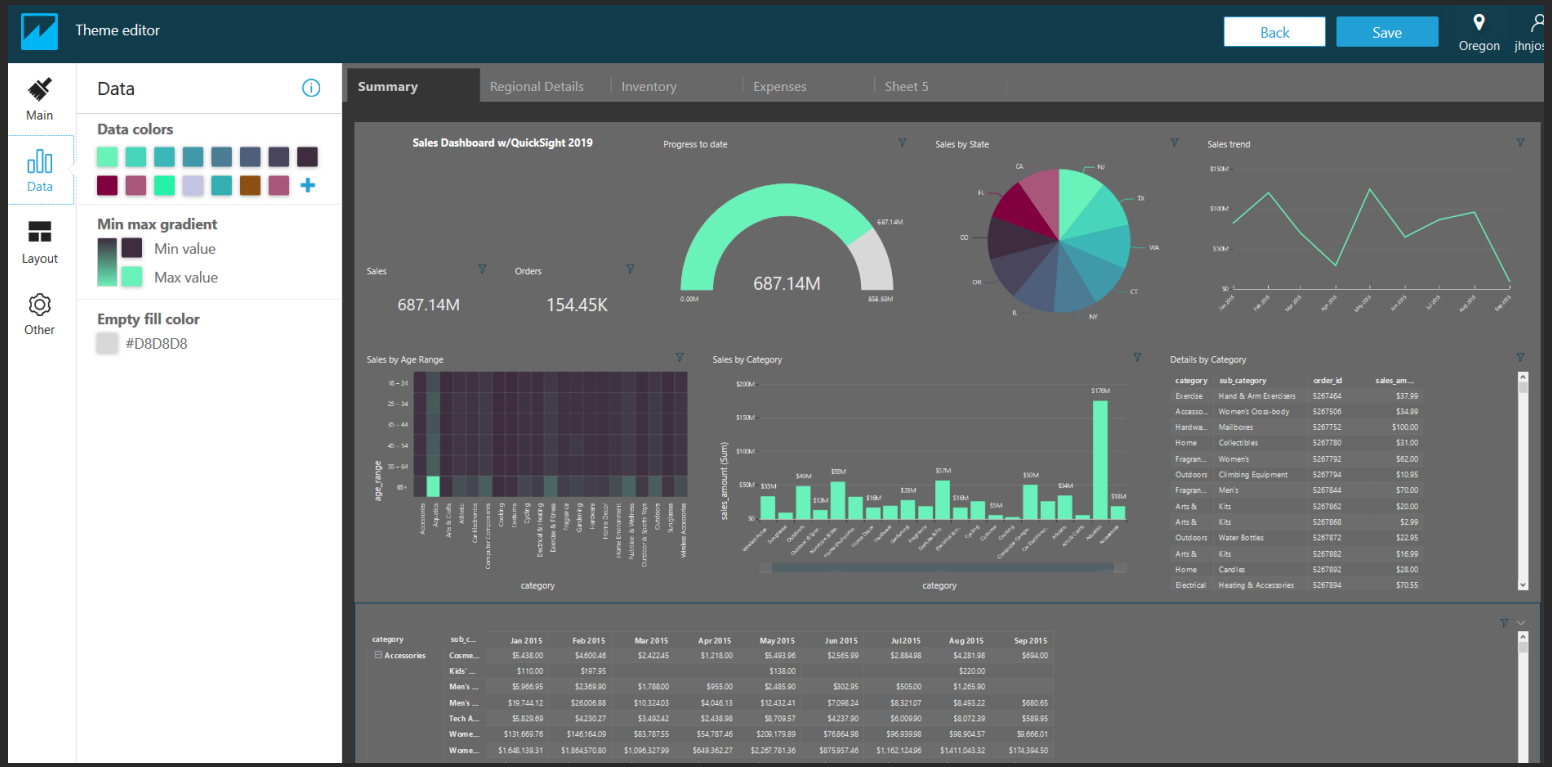
Midnight theme



Theming attributes



Interactive theme editor



New APIs

Data source APIs

- Create/manage data source connections w/o sharing credentials
- Audit data sources, manage ownership and access

Dataset APIs

- Create customized datasets for users or groups
- Allows isolation of data, additional row-level security possible

SPICE ingestion APIs

- Trigger SPICE ingestion of data when ETL/data load is complete
- Easily review history and trace SPICE ingestion details

Fine grained access control APIs

- Manage user/group access to Amazon S3/Athena data via IAM policies

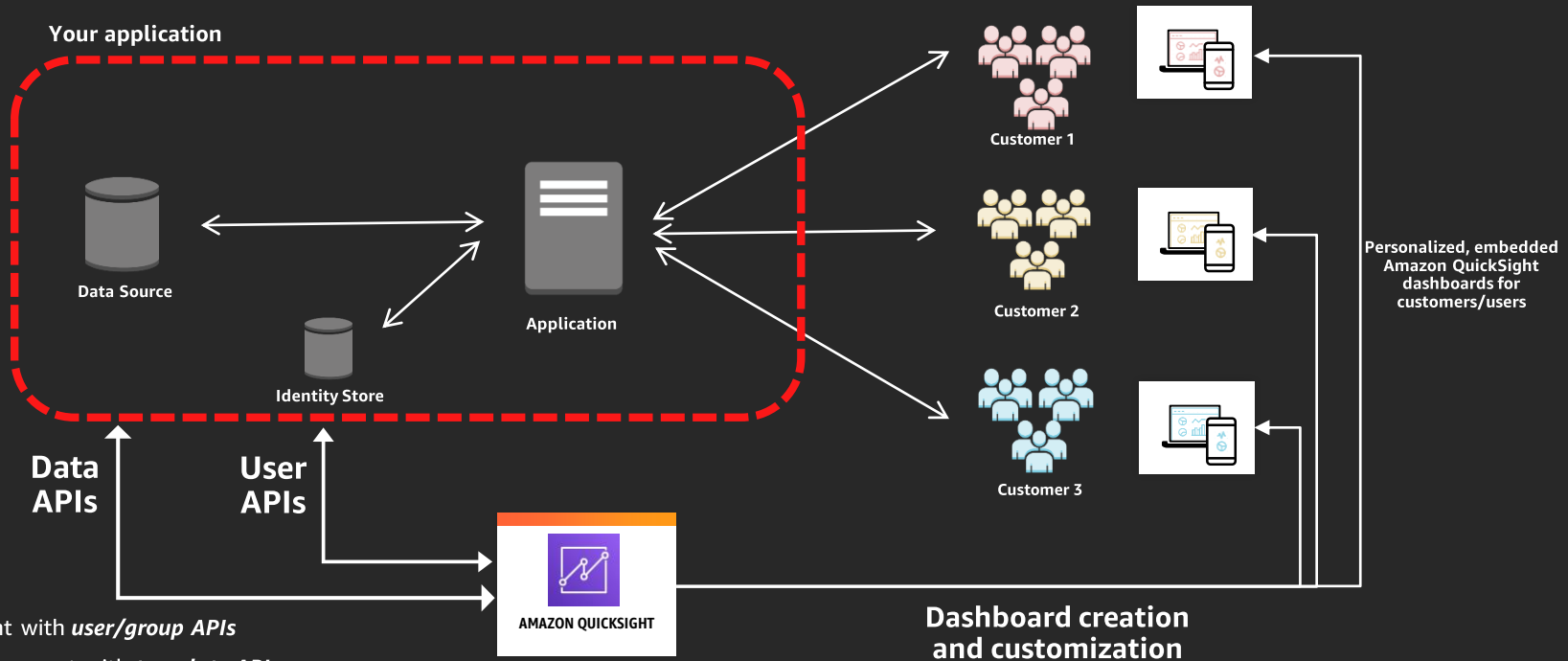
Template APIs

- Create templates from analysis
- Metadata for dashboard with placeholder for datasets
- Templates accessible via API only
- Can be copied/referenced across accounts

Dashboard APIs

- Easily create dashboards per user/group w/different datasets
- Move dashboards across dev environments
- Version dashboards for easy rollbacks
- Audit dashboards, list by users, manage ownership/sharing

Using APIs for your embedded deployments



1. User management with ***user/group APIs***
2. Dashboard management with ***template APIs***
3. Data management with ***data source, dataset, and SPICE APIs***
4. *Coming soon:* Dashboard customization with ***theme APIs***

To summarize

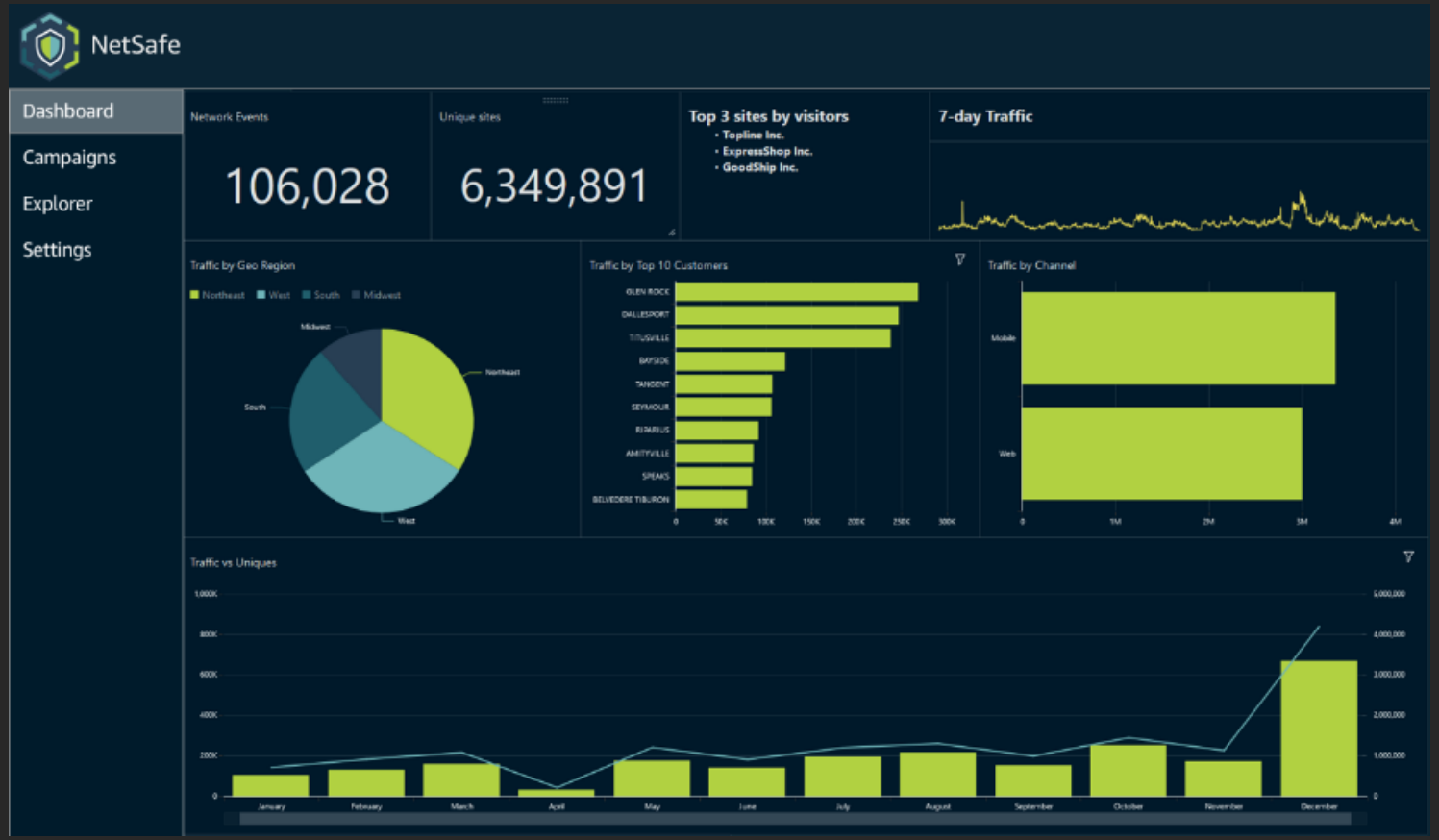
NEW

Themes

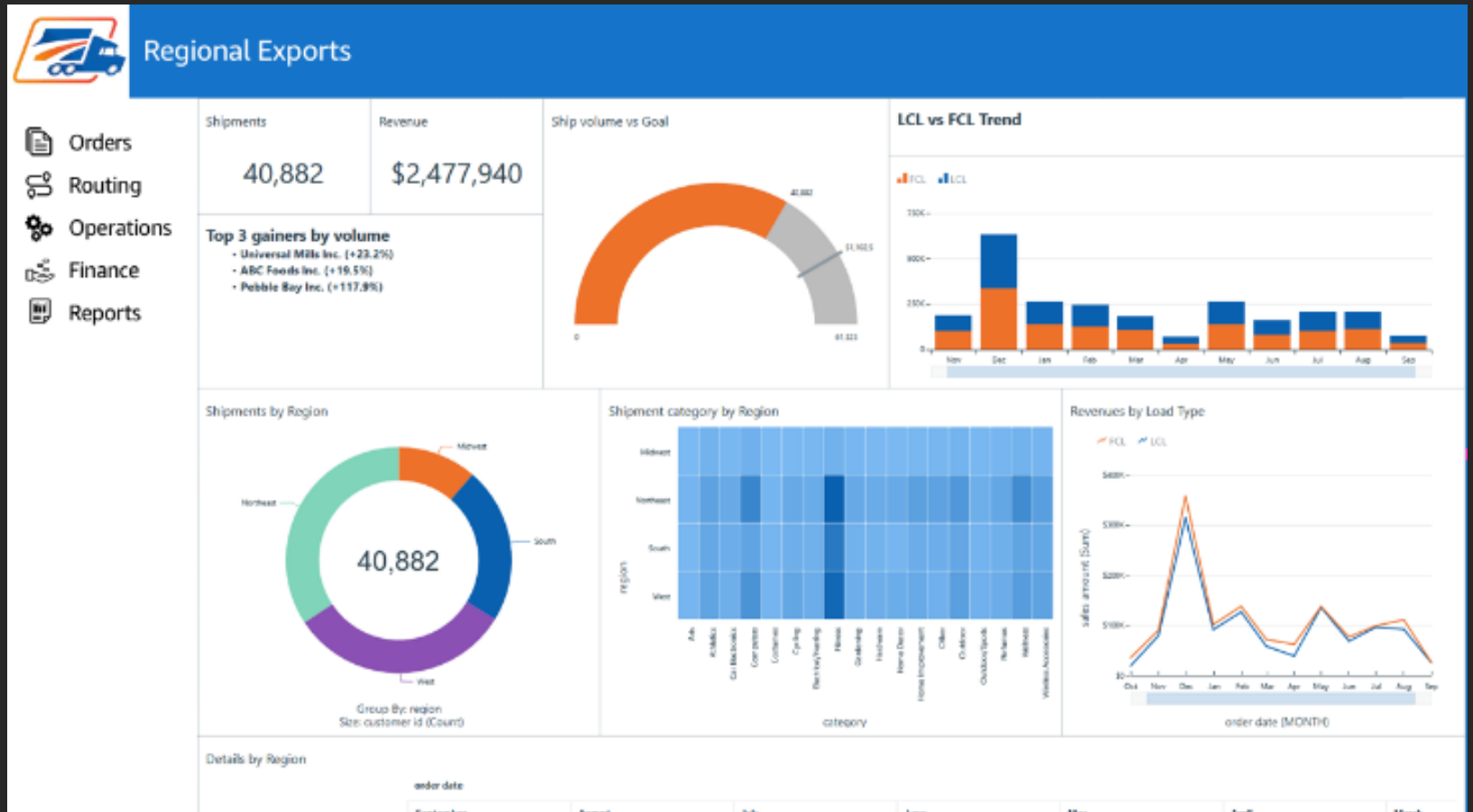
APIs

Auto-scale

No servers



Embed Amazon QuickSight dashboards



Nicholas Hahn

Vice President of Product
Club OS

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Established in 2011, Club OS is a cloud based Customer Relationship Management, Marketing Automation, and Training Management platform built specifically for fitness and wellness businesses.

OUR MISSION

We improve lives through fitness by giving our customers time back to deliver better experiences and keep their business healthy.



Over 3,500 Locations



Over 40,000 Active Users



Supports 1.5 Billion in Annual Revenue

The Exclusive Club Management System For Anytime Fitness

"We have worked with multiple CMS vendors over the years, but Club OS has distinguished itself as the solution that makes the biggest impact for our franchise owners."

-Stacy Anderson, President, Anytime Fitness

Evercommerce

Serves three major sectors and thousands of micro-verticals with marketing, business management, and customer experience solutions

	Home / Field Services	Health Services	Fitness & Wellness	All other verticals
Marketing	**140,00+** Businesses	**17,000** Practitioners	**18,000** Locations	**20,000** Businesses
Business management	Roofing Windows/doors Plumbing HVAC Electrical Security & alarm Landscaping Pool & maintenance	EMR / EHR Revenue cycle management Practice management Specialty medicine Behavioral health Addiction Chronic pain care	Big box gyms Boutique studios Personal training Salon & spa Massage Dance Yoga Martial arts	Nonprofit Professional services Education Pet services Event services Property management Legal Accounting
Customer experience				

Why do we need analytics

Questions from users:

- Most effective location
- Most effective salesperson
- Most successful discount programs
- Which members are the happiest
- and which members stayed the longest

The challenges of going it alone

$550,000+

24 months

Outdated tech stack

Excel spreadsheets via email

Bugs. Everywhere.

The reboot - options

Build on open source

Stitch together point solutions

Pay for an all-in-one solution

The reboot – why the all-in-one solution

Expertise

- Small team
- Outside of the company's core competency

Reduced time to market

- Measured in months instead of quarters

Reduced team cost

- Less new bodies needed [estimated $180K+ savings]

But why Amazon QuickSight?

Enterprise Friendly

- Existing Account Management relationship with AWS
- Billing at the parent account-level
- Pay-as-you-go

But why Amazon QuickSight?

Fully managed

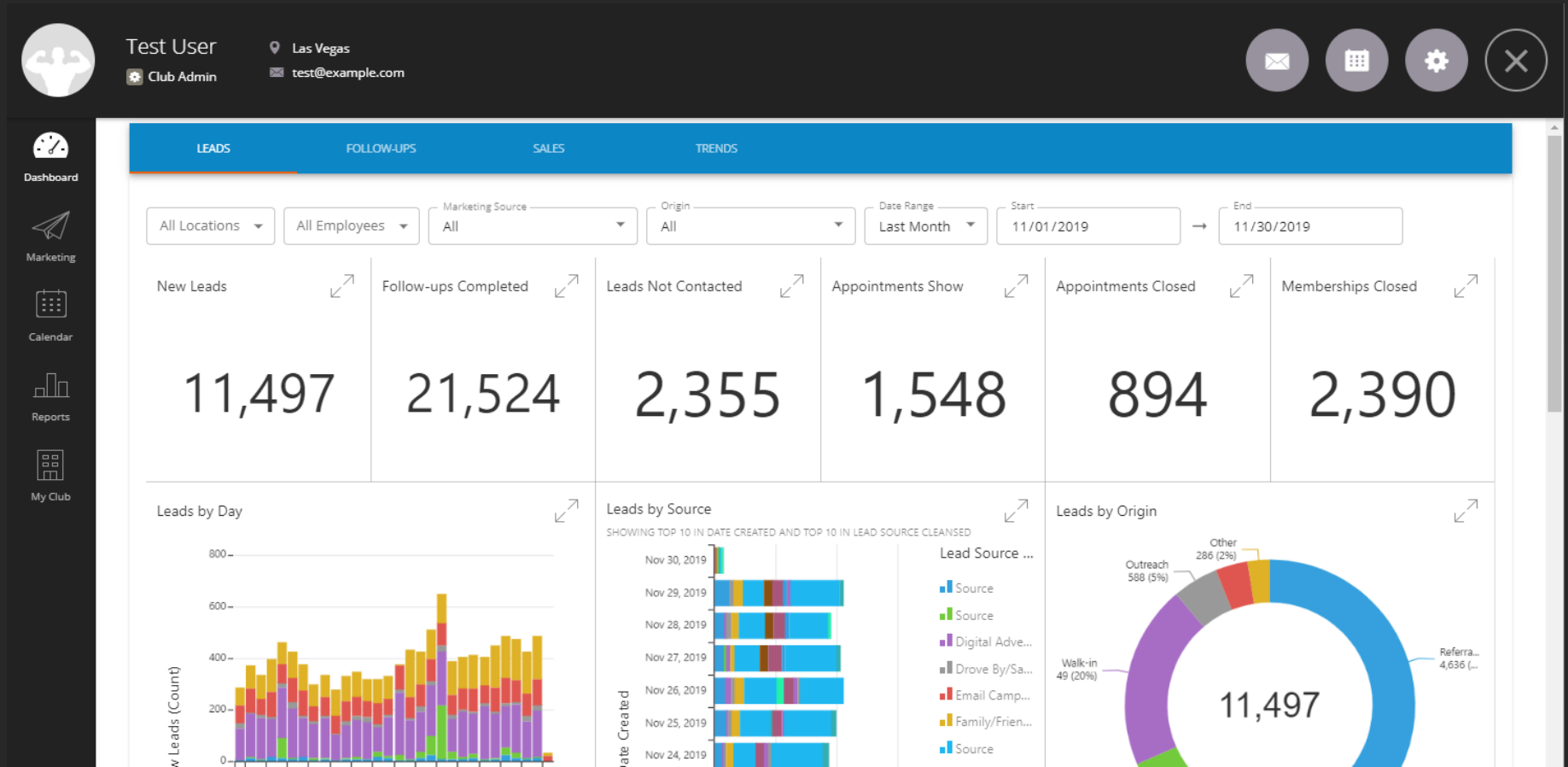
- Focus on meeting our customer's needs
- Scale without concerns
- Savings on ops allocations [estimated $75K+/year]

But why Amazon QuickSight?

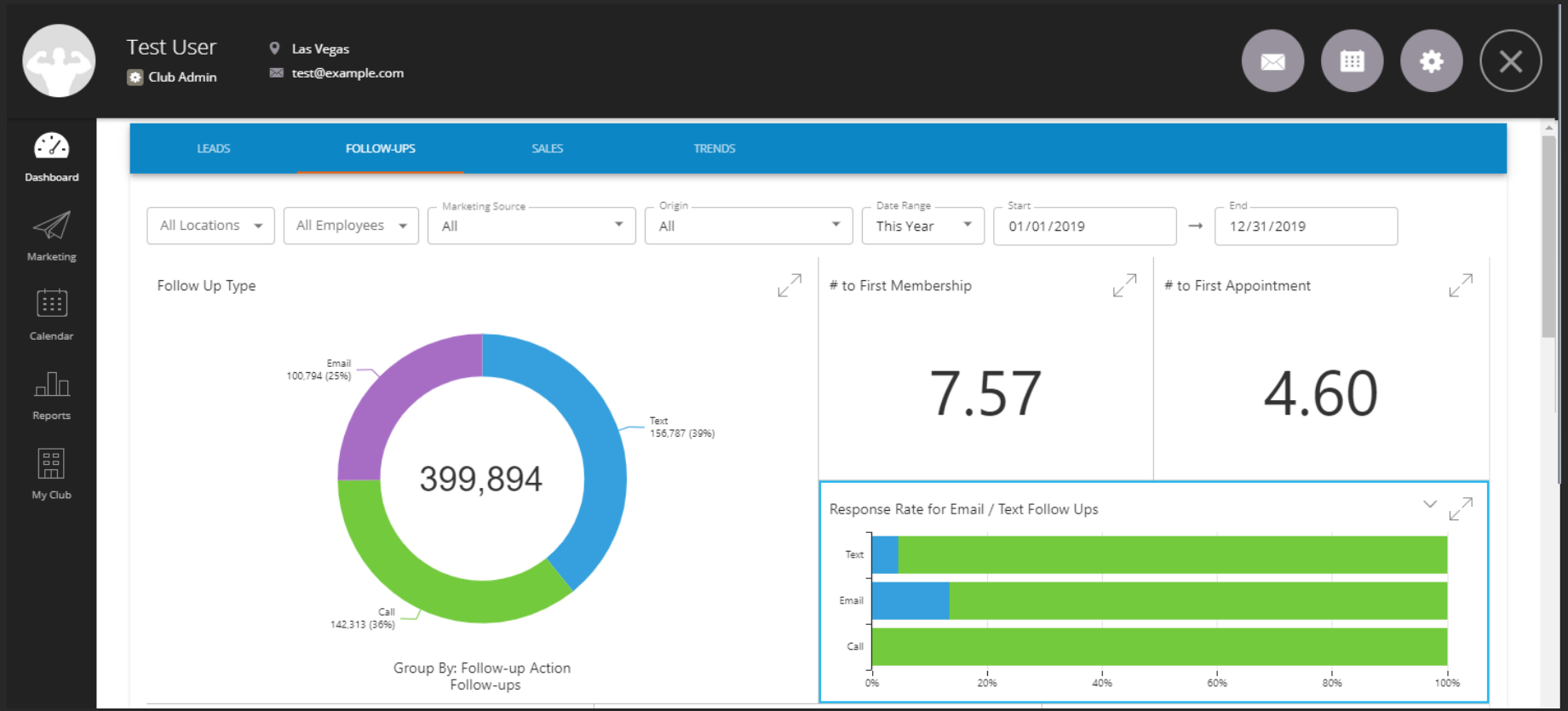
Modern and connected

They give		We get
APIs for data ingestion	→	Fully automated CI/CD
Mobile responsive	→	Zero effort mobile support
SAML + social via Amazon Cognito	→	Security without a custom integration
Data sources for AWS resources	→	Less than one minute to set up
Flexible embedding	→	Powerful control over our UX

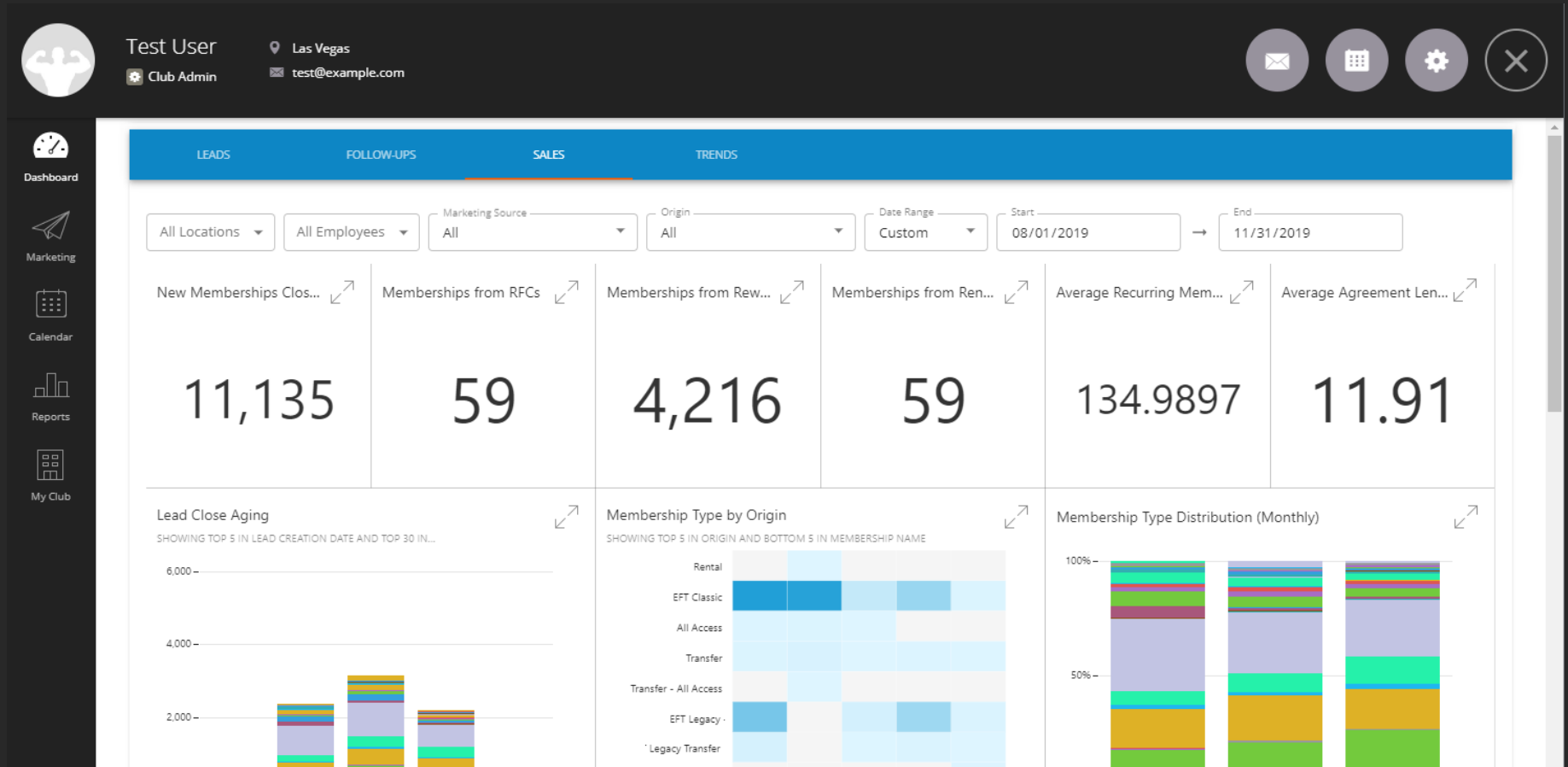
Embedded dashboards in Club OS



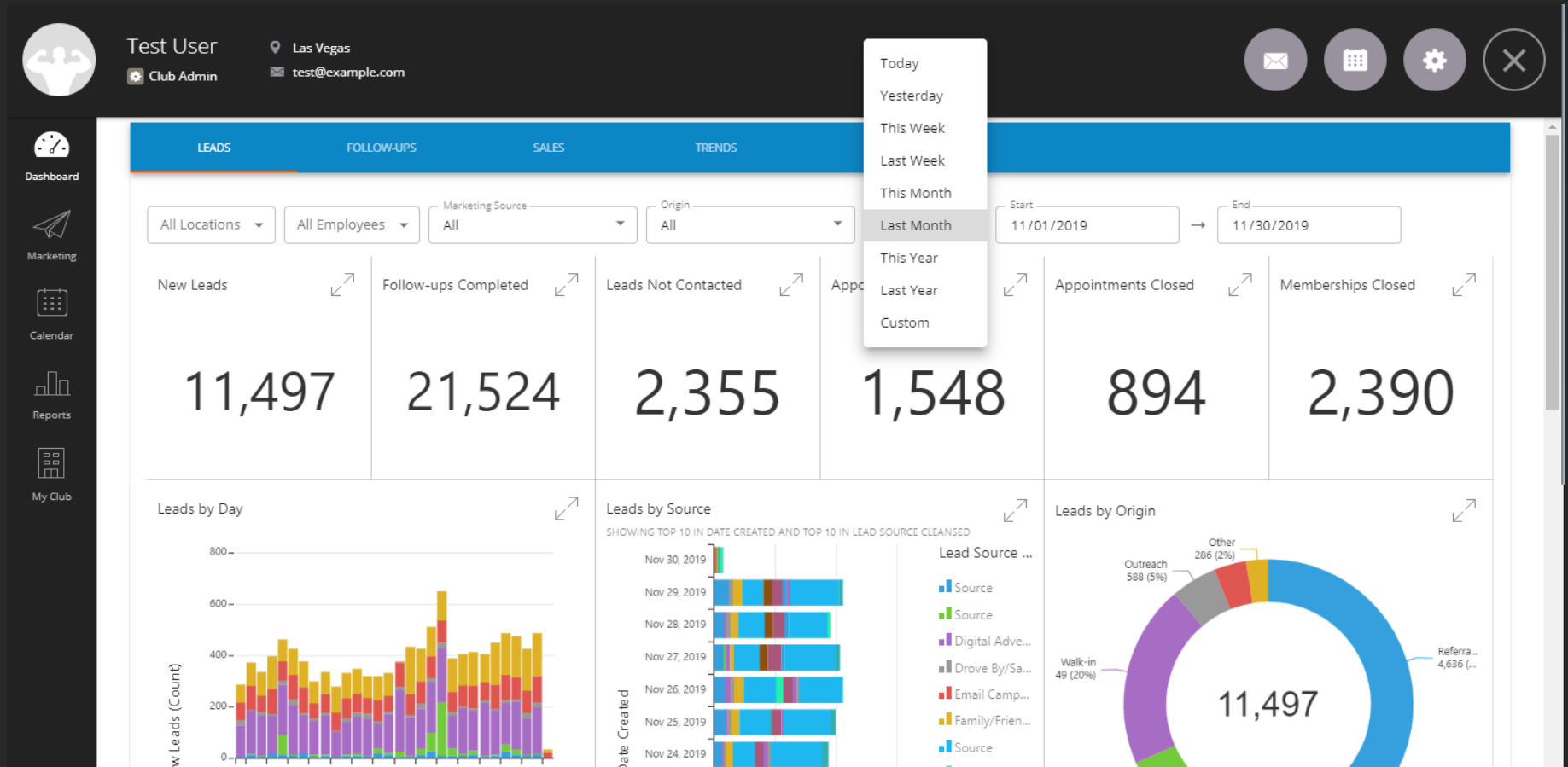
Embedded dashboards in Club OS



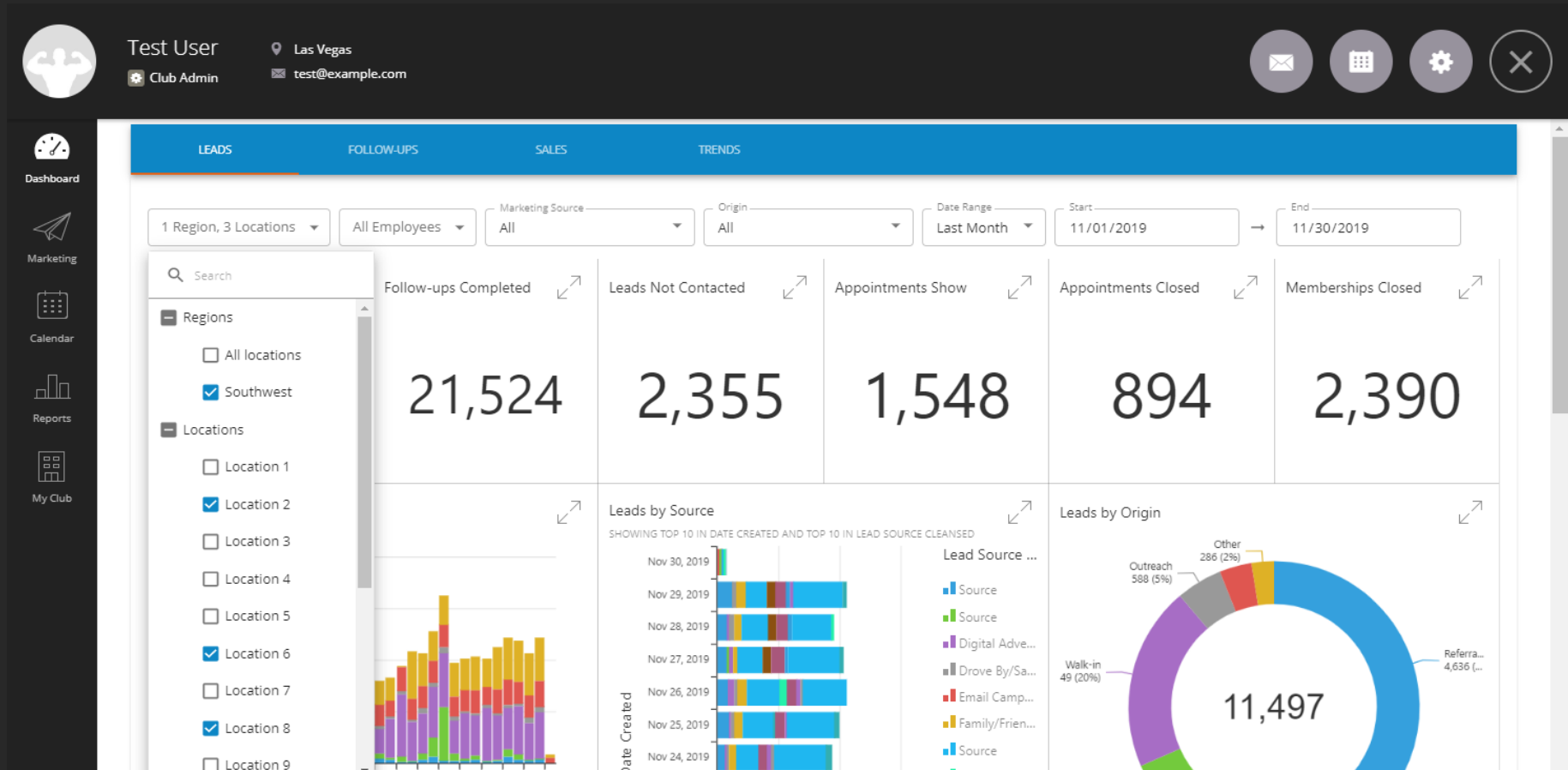
Embedded dashboards in Club OS



Embedded dashboards in Club OS



Embedded dashboards in Club OS



In summary

- Enabled us to change paths
- Months versus Quarters
- Focus on our customers

Latha Govada

Sr. Manager, Analytics
Capital One

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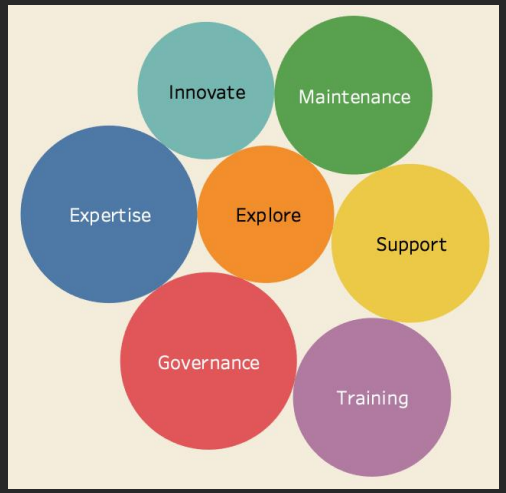
Capital One at a Glance

- A leading information-based technology company that is on a mission to help its customers succeed by bringing ingenuity, simplicity, and humanity to banking.
- 25-year old, founder-led company
- Nation's largest direct bank
- 3rd largest credit card issuer in the U.S.
- 2nd largest financial institution auto loan originator
- 8th largest bank based on U.S. deposits
- FORTUNE 100 Company (NYSE: COF)



Enterprise BI

Center of Excellence



- ❖Support a BI community of 25k+users across 8 LOBs
- ❖Audience from executives to call center agents
- ❖Includes traditional & self-service BI

Our analytics ecosystem needs to solve for:

- ✓One Lake consumption
- ✓Seamless Integration to existing applications and analytical processes
- ✓Governance incl. Enterprise Data Management standards and auditability

Key BI use cases

Our business as well as enterprise platform teams leverage BI tools for a variety of use cases across all our LOBs .



Performance analysis & forecasting



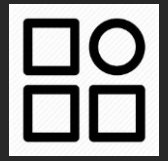
Spend & risk analysis



Market research



Monitoring & governance



Fraud & anomaly detection



Operational reporting

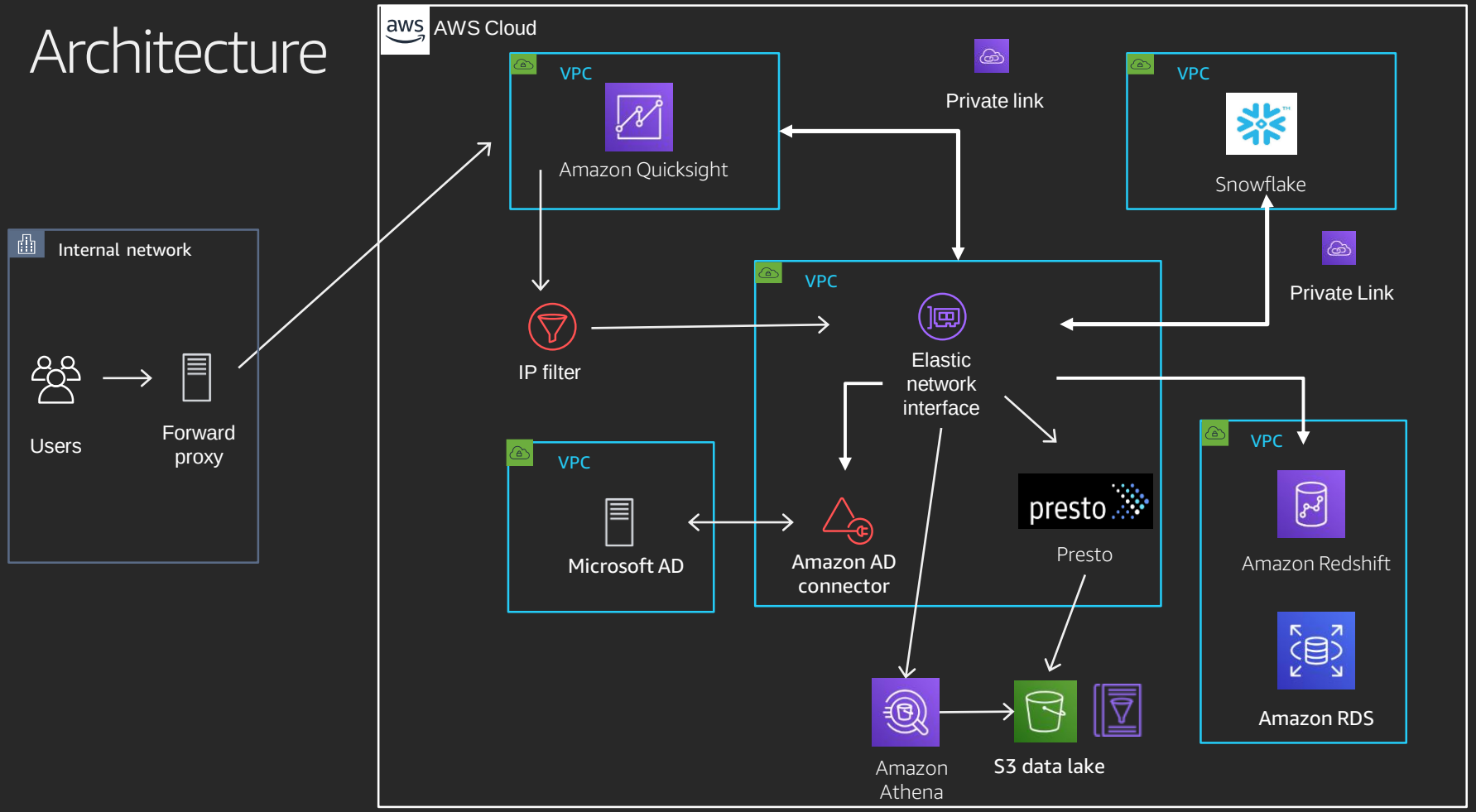
Why Amazon QuickSight

- Heterogeneous data eco-system support – data lake, EDW, RDS, etc.
- Secured embedded analytics with SSO
- Fully managed service = no downtime
  - No re-hydrations
  - No long software/capacity upgrade cycles
  - Auto-scaling
- Pay for usage = cost effective charge back model
- Power of machine learning & anomaly detection



Next generation BI

Architecture



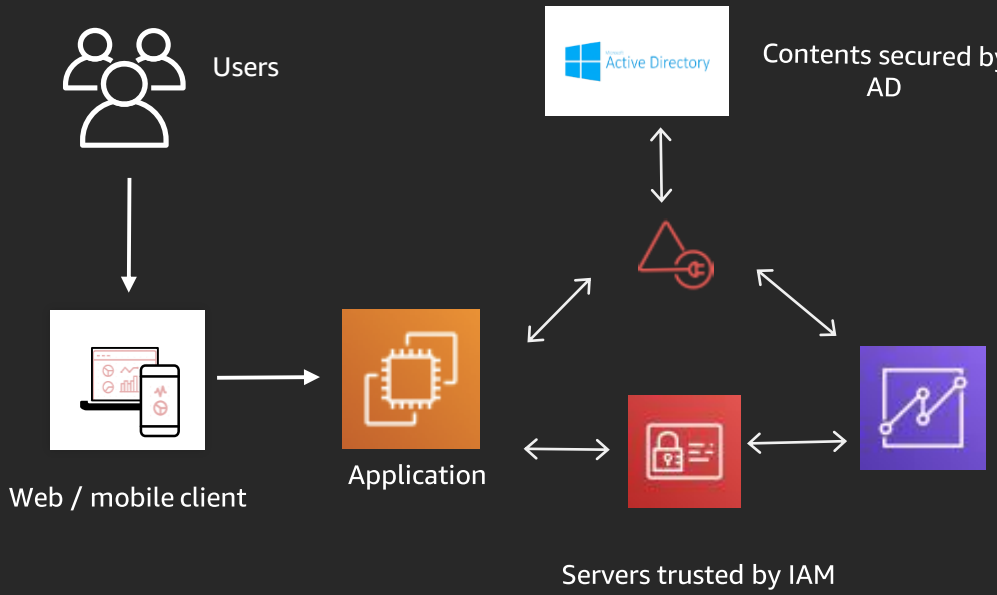
Why Amazon QuickSight for embedded dashboards

Create dashboard

Configure permission

Generate signed URL

Embed URL



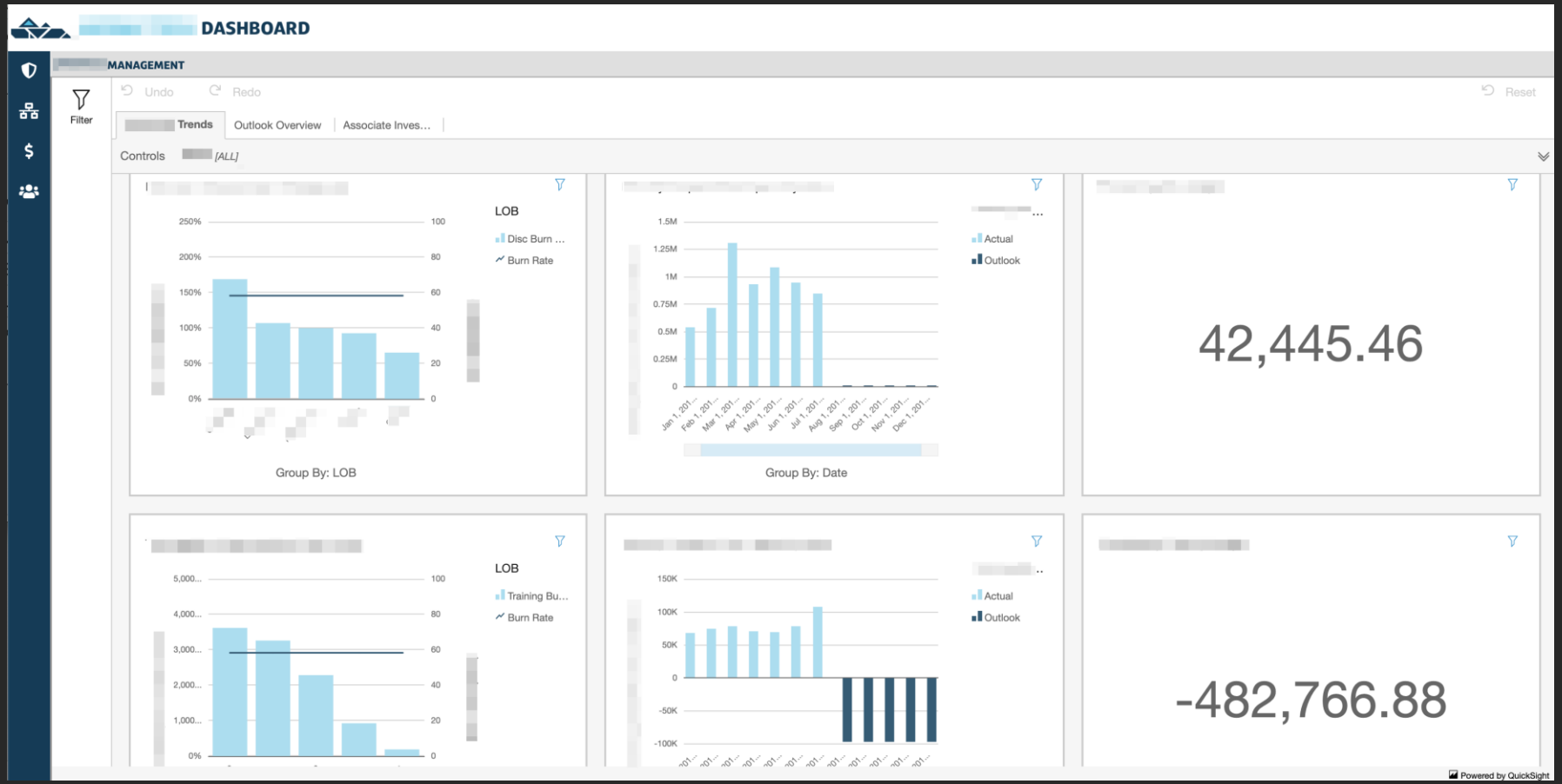
Additional use cases for Amazon QuickSight APIs

- **Disaster recovery**
  - Resiliency - cross region replication
  - Migration framework
- **Governance**
  - Enterprise report catalog & lineage
  - Access controls
  - Auditability - usage metrics & KPIs

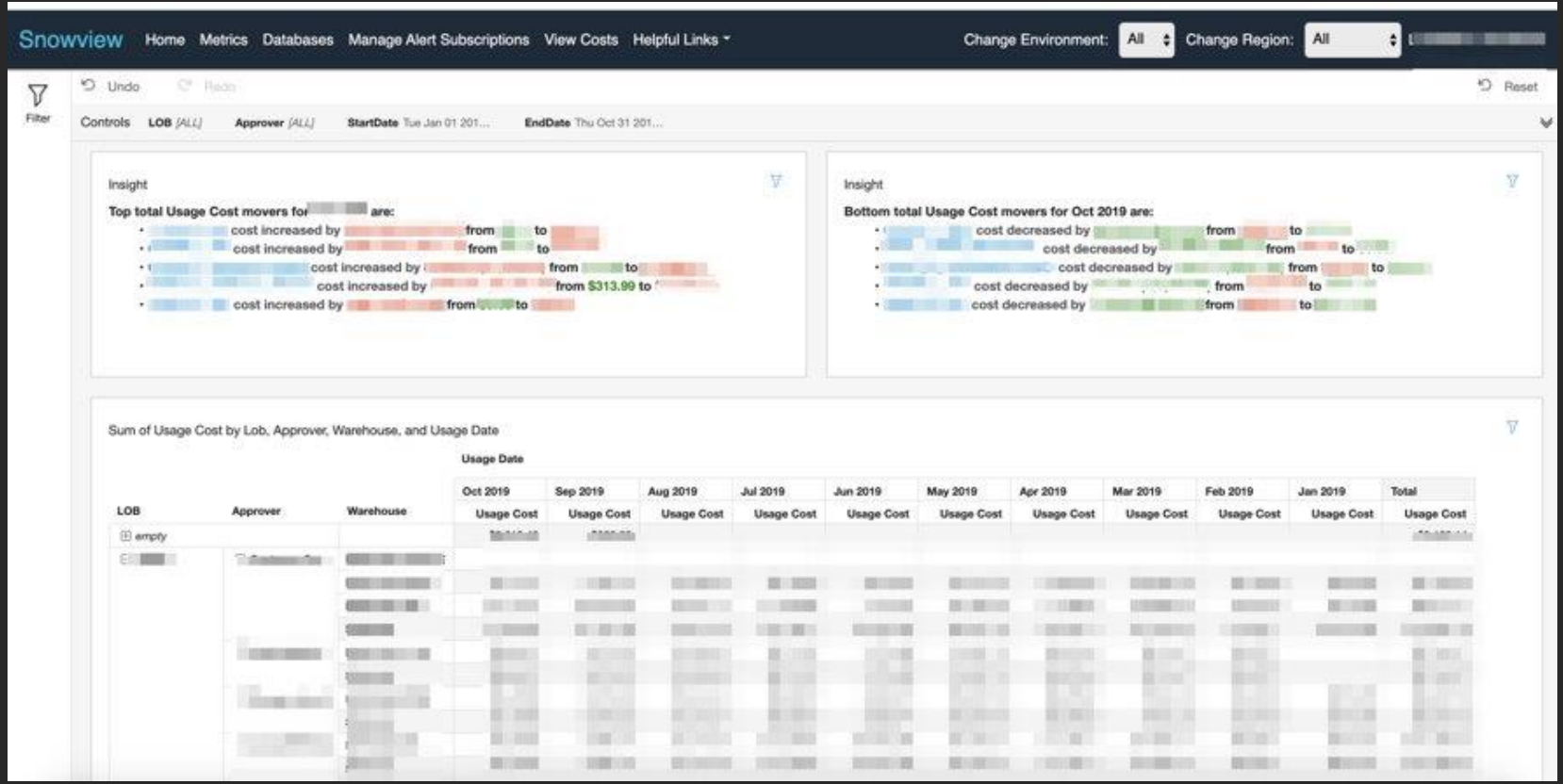




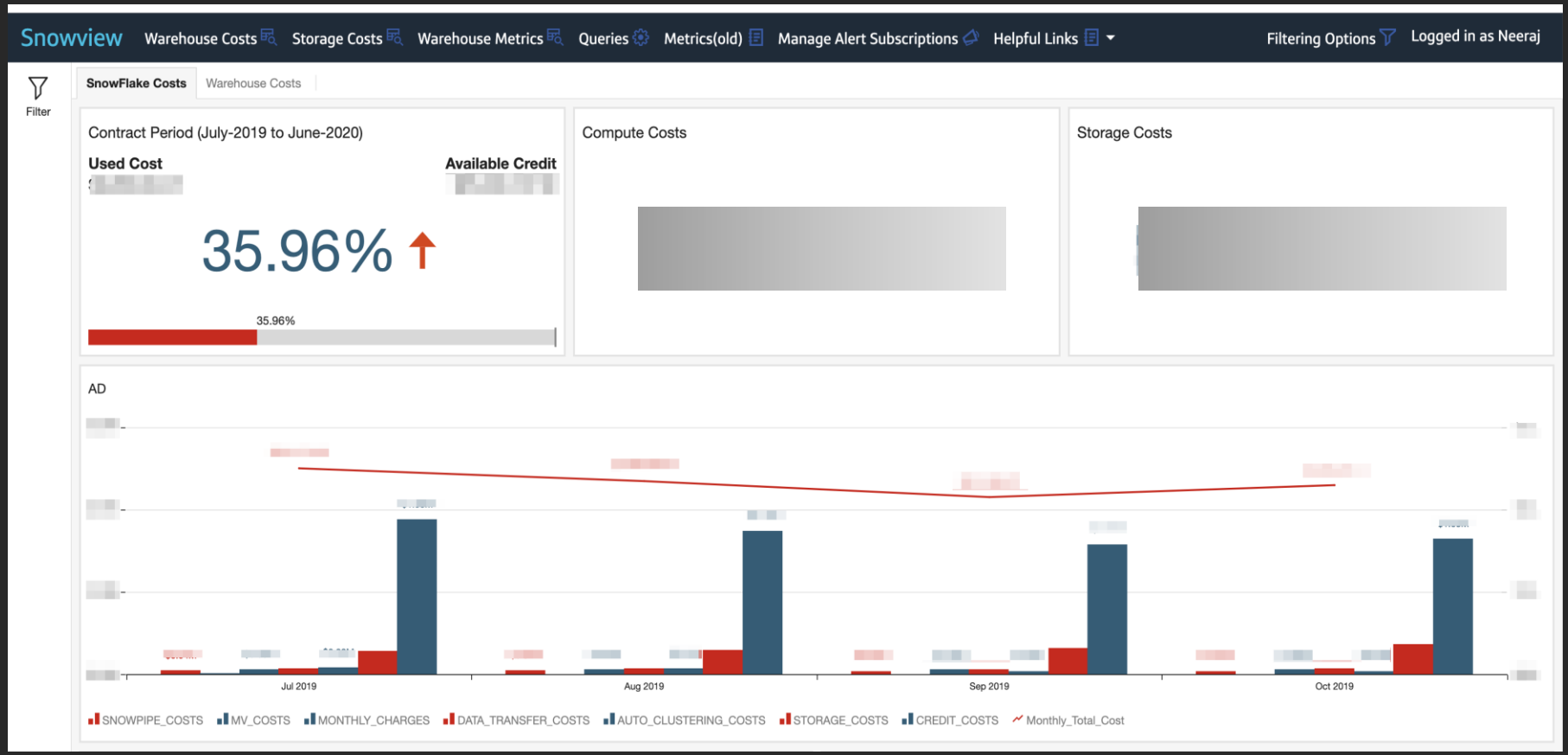
STS management portal



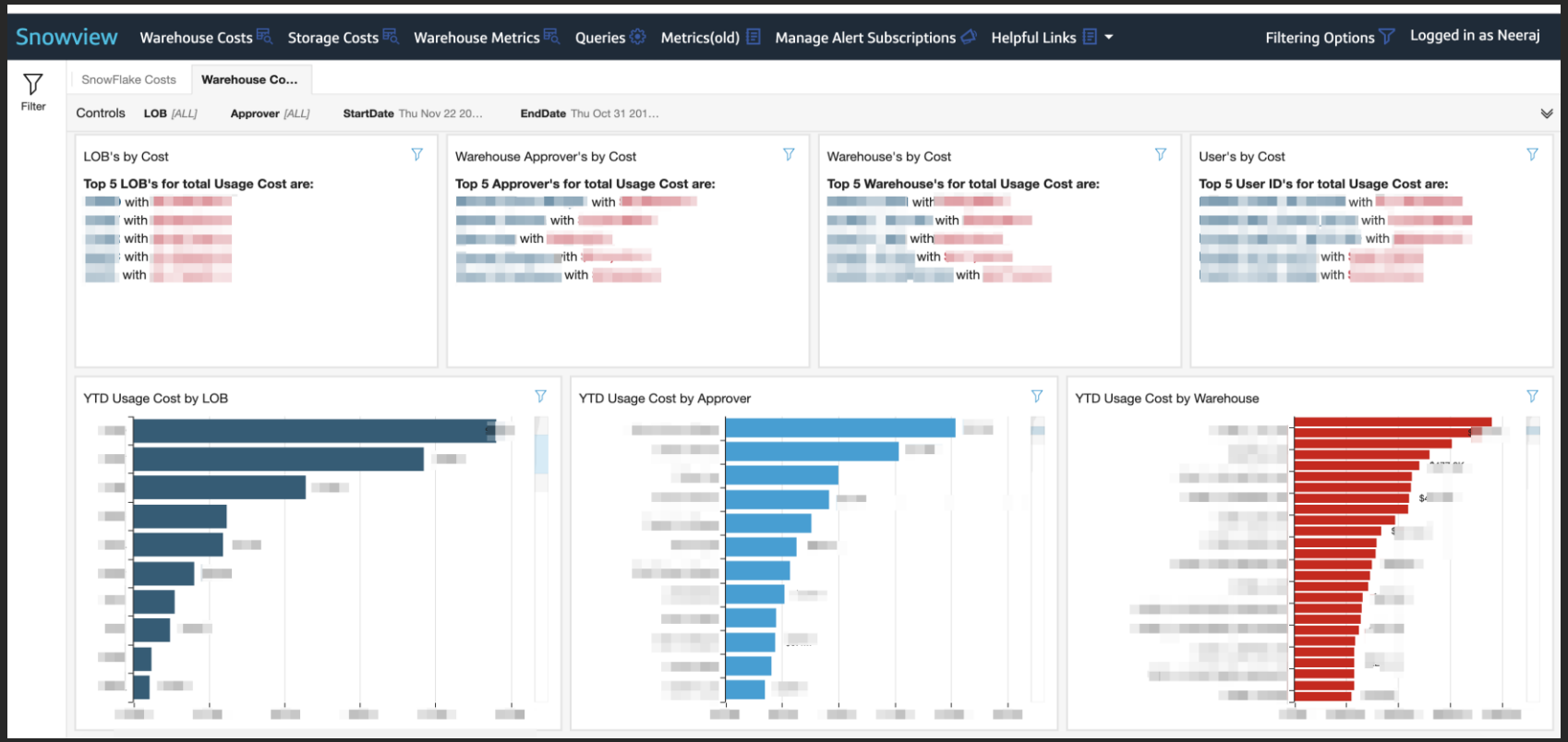
Snowview portal



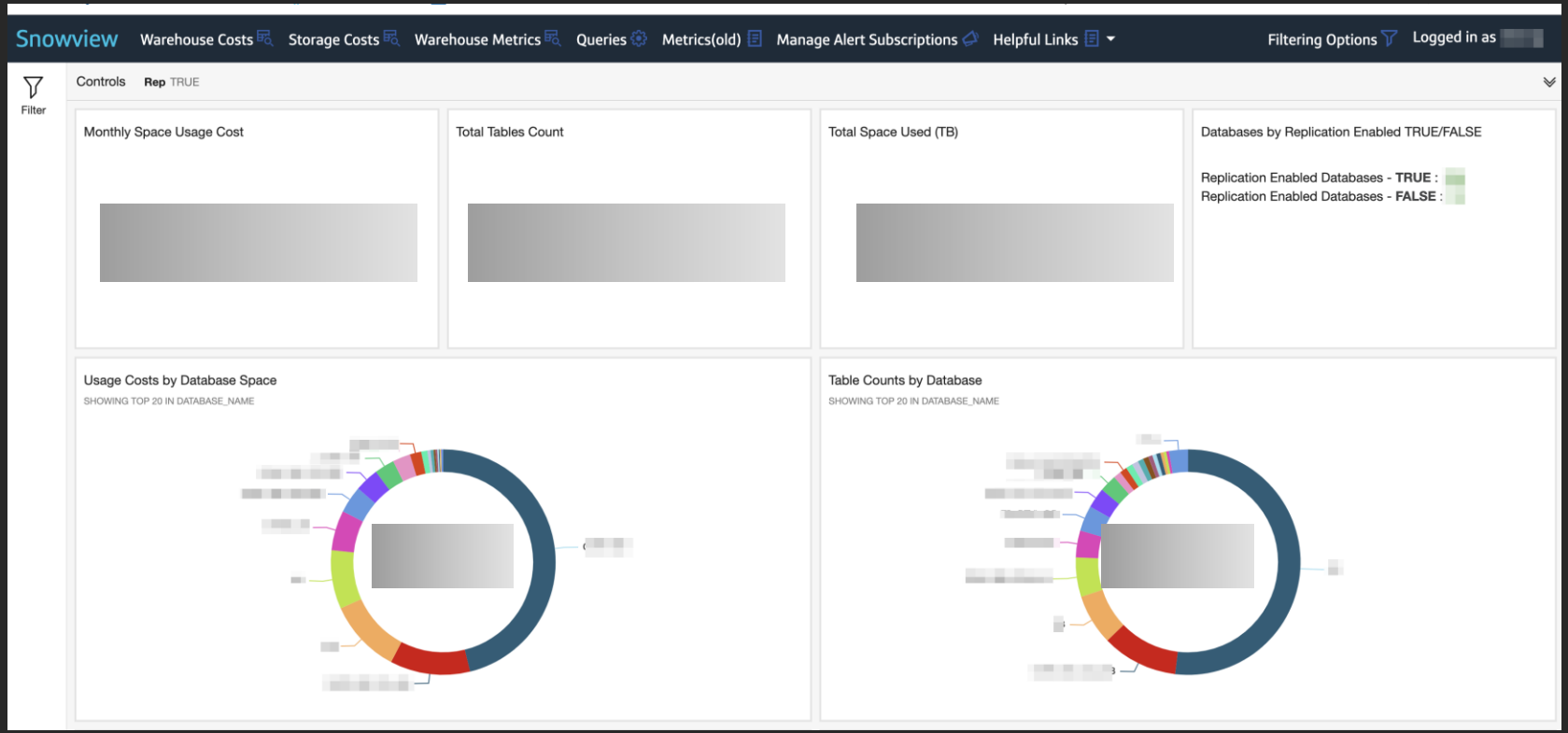
Snowview portal



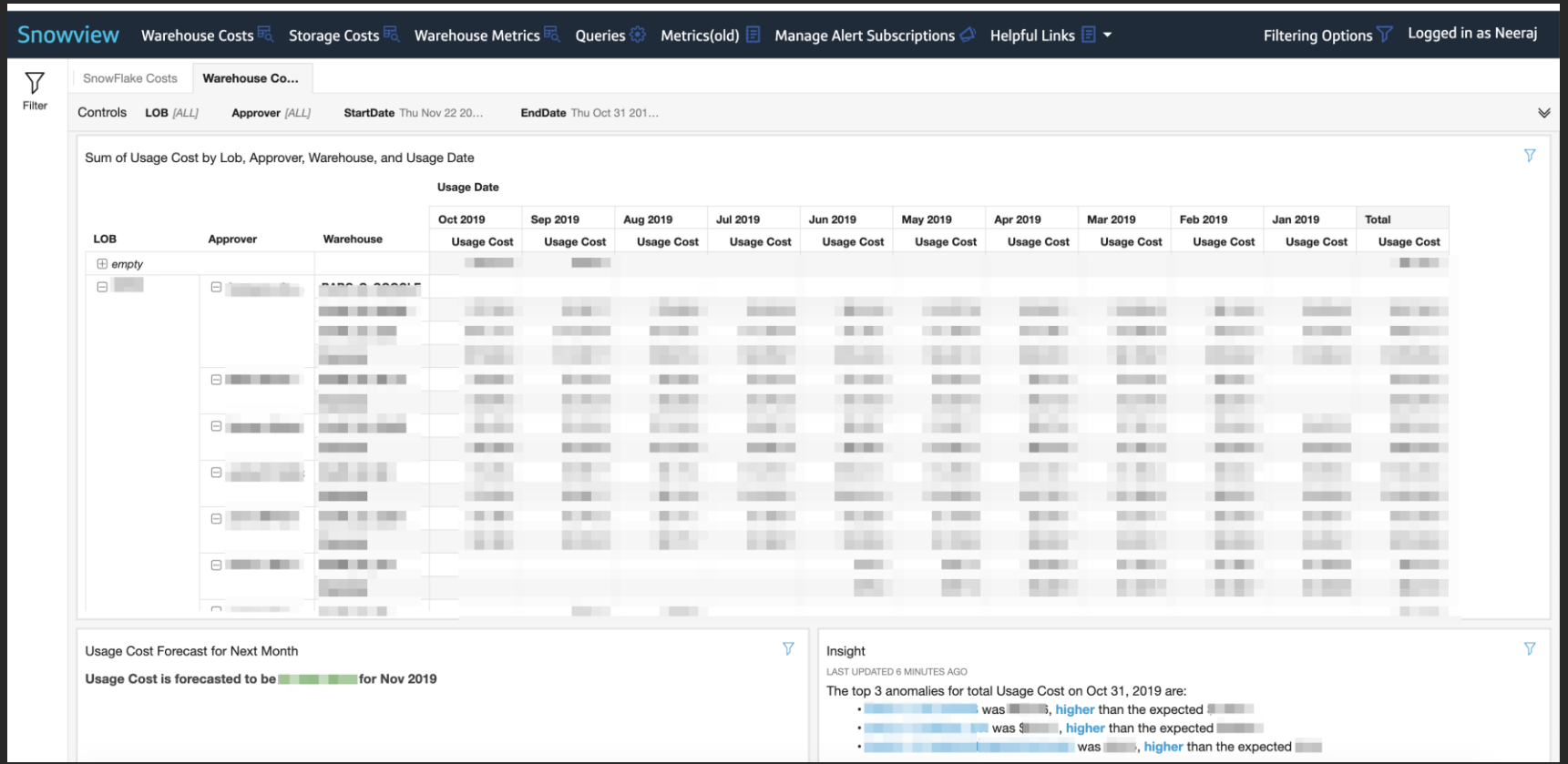
Snowview portal



Snowview portal



Snowview portal



Our success story

- Ease of provisioning and adoption
    - Data to insights in a day
    - Embedded analytics in less than a week
- Enable BI on One Lake
- BI Center of Excellence redefined

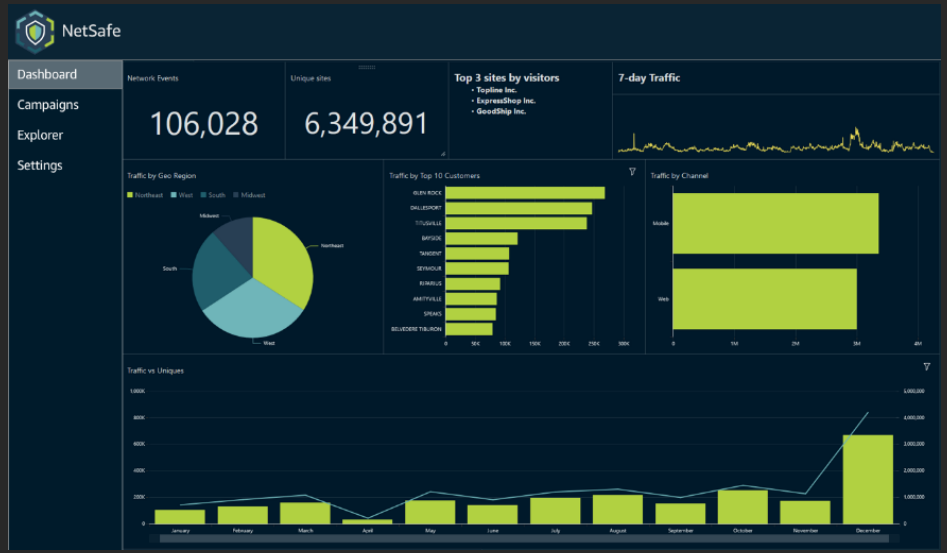
Embedded analytics



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In Summary



Themes - Match your application UI

APIs - Deploy and manage dashboards + data

Auto-Scale – from 10s to 10s of 1000s of users

Fast, consistent perf | Pay-per-Session

No Servers - Embed dashboards at scale

No server management | No scripting

Some key new features in the last 6 months

Visualization + interactivity

- Conditional formatting
- Cross visual filtering
- Tabs in dashboards

Data connectivity

- Cross-source joins
- Private VPC connectivity options cross/in-region
- New regions: London, Frankfurt, Seoul
- In-region Active Directory support for authentication
- SageMaker integration PREVIEW

Data management

- 100M rows of data in SPICE
- Fine-grained access control over S3/Athena with IAM

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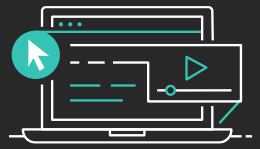
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https://pages.awscloud.com/EmbeddingAPIPreviewSignup_01.LandingPage.html

What's New in Amazon QuickSight
https://docs.aws.amazon.com/quicksight/latest/user/WhatsNew.html

Learn big data with AWS Training and Certification

Resources created by the experts at AWS to help you build and validate data analytics skills



New free digital course, Data Analytics Fundamentals, introduces Amazon S3, Amazon Kinesis, Amazon EMR, AWS Glue, and Amazon Redshift



Classroom offerings, including Big Data on AWS, feature AWS expert instructors and hands-on labs



Validate expertise with the **AWS Certified Big Data - Specialty** exam or the new **AWS Certified Data Analytics - Specialty** beta exam

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aws training and certification

Thank you!

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