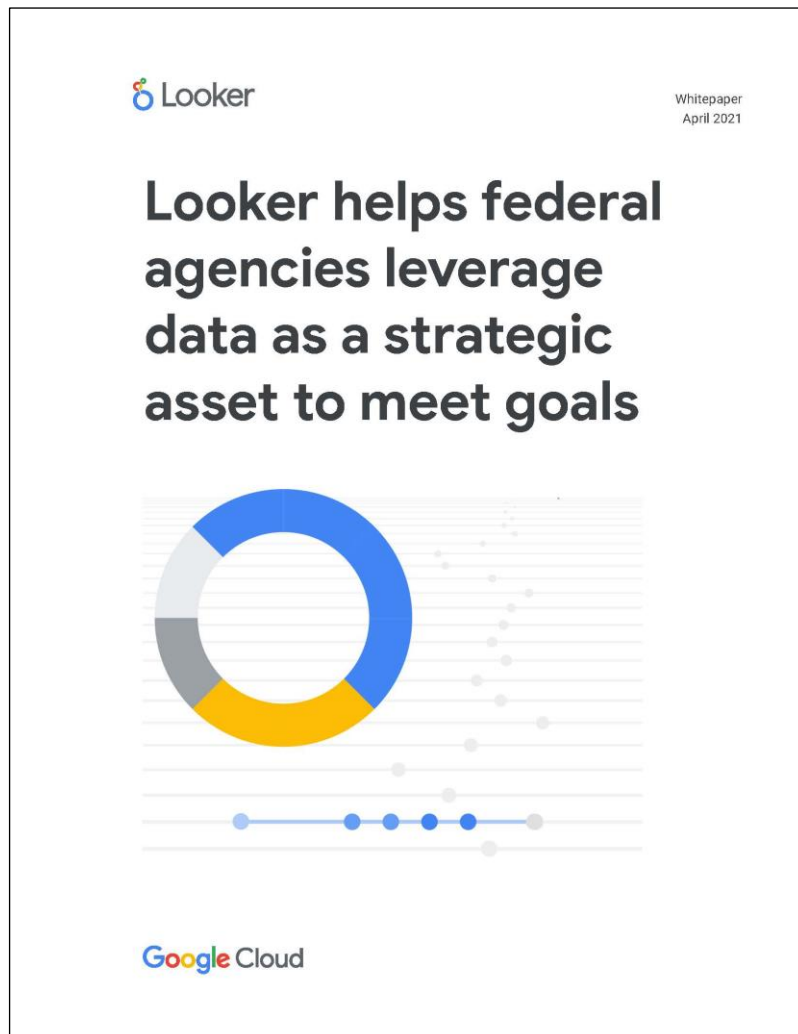


GOOGLE CLOUD LOOKER WHITEPAPER

Looker helps federal agencies leverage data as a strategic asset to meet goals.



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The use of data is transforming the economy, government, and society. The federal government must maintain its role as a preeminent supplier as well as a sophisticated and ethical user of data, in order to fulfill its duty to the public. While the federal government leads globally in developing and providing data about the United States and the world, it still faces challenges to harness the power of data to deliver on its mission, serve the public, and practice responsible stewardship of resources.

Empowering the Federal Workforce

Federal agencies realize there is unharnessed power from the exponentially increasing volumes of data; however, there is still much progress to be made in order to leverage data as a strategic asset that can be utilized to make better, faster decisions at the needed scale.

Empowering the federal workforce with tools to expand the capacity for critical data-related activities such as analysis and evaluation, data management, and privacy protection will lay the groundwork required to power decision-making, efficiency, and transparency – within and across agencies.

With access to actionable insights, employees and agencies can use data to deliver on their mission, serve the public, and steward resources while protecting security, privacy, and confidentiality. Furthermore, they can leverage data to provide a valuable roadmap for critical activities such as keeping constituents safe, ensuring security, and instilling trust in information.

Looker's modern business intelligence and data application platform was designed with flexibility in mind to meet organizations where they are, help them get where they need to go, and react to unexpected events along the way. With Looker, agencies can power digital transformation through data to help promote ethical governance, conscious design, and cultivate a learning culture.

Criteria for Evaluating Vendors

In order to ensure data is accurate, complete, timely, and protected, many federal agencies have established data strategy goals centered around the principles of making data secure, trustworthy, accessible, understandable, and visible. To ensure consumers have the comprehensive and contextual information they need to make informed, data-driven decisions, leading agencies are also focused on interoperability that links related information securely by exchanging data between systems and maintaining semantic understanding.

These principles help to promote data cultures and public use, while ensuring data is protected as well as used efficiently and appropriately.

Building a Culture that Values Data and Promotes Public Use

- Promote self-service, insights, and increased accountability
- Power decision-making and custom applications

Governing, Managing, and Protecting Data

- Provide data governance, security with role based access, documentation, and the ability to audit user behavior
- Operationalize data with integrated insights and collaborative capabilities across state, local, tribal, and federal agencies

Promoting Efficient and Appropriate Data Use

- Empower data-driven workflows with reusable, governed metric definitions
- Promote secure access to actionable insights

The Looker Difference

Looker's modern platform was built to break down the siloed barriers caused by legacy tools that have a high technical barrier to entry, while also governing metric definitions and access which can be a challenge with data discovery and visualization tools.

With Looker, agencies can confidently supply secure, self-service data access to the people who need it — whether that's via a dashboard, embedded within another application, or powering an optimized workflow.

Old Way

- Data consumers have limited, confining ways to access data. Data is not available in-workflow, and users experience silos of information and metric definitions
- Limited to non-existent self-service leads data, teams focused on building reports and dashboards. Resource time is spent on ad-hoc requests, not strategic initiatives
- Data teams waste hours extracting data for analysis, often with high costs and low efficiency. Cubes and extracts quickly become stale and need frequent updating
- Isolated approaches to metrics and business logic. No governance of metrics and KPIs built into the system. The result often is data chaos

Looker's Modern Platform

- Data experiences can be tailored to meet data consumer needs. Embedded analytics share data where it is wanted. Seamless integration is created with existing workflows and 3rd-party tools. Data is used the way organizations need to with robust APIs
- Data teams curate interactive data experiences, allowing users to build their own reports and dashboards
- In-database architecture and automated data delivery can eliminate repetitive data extraction tasks. Users see data that is fresh
- Unified, governed, and clear metrics can make data analysis easy. Users leverage updates made to metrics or underlying data

Empower with the Power of Looker

Looker is Google Cloud's enterprise platform for business intelligence, data applications, and embedded analytics. With Looker, agencies can deliver actionable business insights, create new value streams, and infuse data into products and workflows to complete the federal data strategy framework.

Modern BI & Analytics

Create dynamic dashboards for more in-depth analysis. Give teams access to reliable data and support better reporting.

Integrated Insights

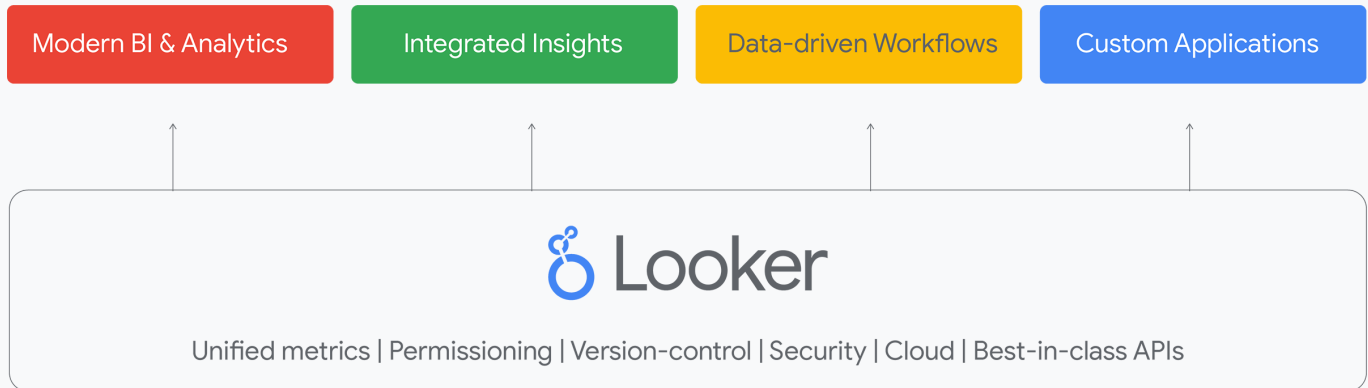
The Looker platform can work seamlessly with your existing BI set up. Unify and empower your teams to make more effective, data-informed decisions.

Data-driven Workflows

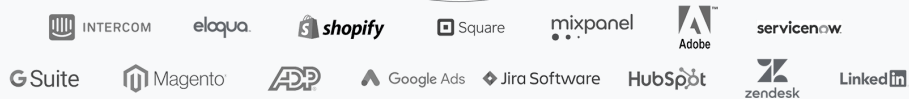
Save time and money by putting your data to work on every side of your business. Looker's platform is agile enough to stimulate any workflow.

Custom Applications

Provide a purpose-built tool that users need, while creating data-driven experiences that people love.



SQL in ↓ ↑ Results back



In-database

- No additional data movement or storage required
- Access to underlying data (no cubes, aggregates)
- Leverages native database functionality and power

Semantic Modeling Layer

- Define standard business logic across the business
- Robust data permissions (row level, column level, content)
- Git-integrated IDE with version control

Modern Architecture

- 100% web-based
- Supports cloud, multicloud, hybrid cloud, and on-premise
- API extensibility
- Power variety of data experiences

Advantages of Looker

In-database analytics: Unlike traditional BI tools, Looker takes advantage of the in-database processing capabilities of modern data warehouses for massive scalability and operational efficiency. This also enables business users to discover insights on the entire data set and take advantage of federation and data virtualization across multiple sources.

Secure your data where it lives: Looker leaves your data where it can be most secure – in your database. Manage data access for your users by setting permissions that control access to data at the row or column level.

Native database integration: Looker supports native integration with leading on-premise and cloud data warehouses, such as Google BigQuery, AWS Redshift, Athena, Azure SQL DW and Snowflake. Looker runs natively on all three major public clouds as well as on-premise, making it easy for customers to adopt Looker as they modernize their enterprise data warehouses in the cloud. While integration of Looker into Google Cloud Platform (GCP) becomes deeper, customers can continue to benefit from Looker's multicloud capabilities and its ability to connect to many data sources like Oracle, Microsoft SQL Server, Teradata and more in Google Cloud, on other public clouds, and in on-premise data centers.

Flexible modeling layer: Looker has built a powerful data modeling layer, LookML, which provides data analysts an easier way to centrally describe dimensions, aggregates, calculations, and relationships in a database and make it available for the rest of the users. LookML allows Looker users to see a clean data platform describing their data that abstracts away the details of how and where the data is stored.

Go beyond simple database business intelligence: Looker's platform lets you take advantage of advanced analytical functionality. This functionality can include machine learning, JSON ingestion, ETL integration and usage monitoring.

Extensible web architecture: Looker's platform can be used to build robust data-driven applications. Each Looker query and visualization is addressable by URL. The simple extensibility and connectivity to web services enable application developers to integrate Looker with their applications and workflows, and embed interactive data visualization elements in their app for in-app contextual insights.

Augmented predictive Insights: Looker provides integrations for data science use cases to help analysts accelerate their data science workflows and augment BI reports and dashboards with predictive insights.

Conclusion

The explosion of data volume and usage is transforming the economy, government, and society. While the federal government is a global leader in many instances for developing and providing data about the United States and the world, it still faces challenges to harness the power of data to deliver on its mission, serve the public, and be a responsible resource steward. Federal agencies have an opportunity to harness data to power decision-making, efficiency, and transparency. Looker's modern business intelligence and data application platform can help agencies by meeting them where they are today, and leverage data to promote ethical governance, conscious design, and cultivate a learning culture.

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