

Whitepaper July 2021

Looker Summer '21 New Product Features



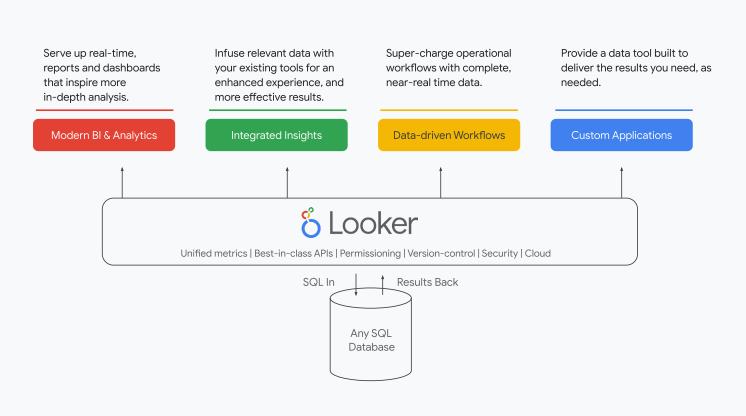
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Looker, Google Cloud's modern platform for datadriven experiences, has a mission to empower people through the smarter use of data. With this announcement, we continue to invest in a robust data platform that enables organizations to go beyond traditional BI, scales and grows with your business, allows developers to build innovative data products faster, and ensures data reaches the right people in the right way. These new product features improve out-of-the-box functionality and make it more intuitive for customers to extend their existing use cases with packaged analytics. Looker also now supports more use cases with a more scalable backend and more user-friendly functionality in its BI consumption layer.



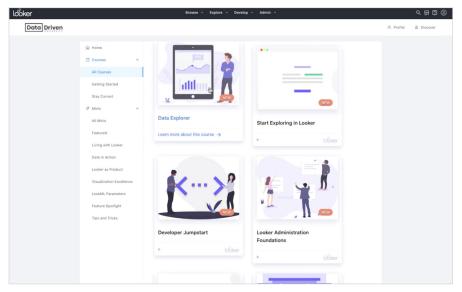
Build Data Experiences at the Speed of Business

Looker enables developers to create customized data experiences using components and modules that can be connected with services to build complex, powerful data products in a reusable format.

The Looker Developer Portal is an all new one-stop hub, through which Looker developers can engage, discover, learn and adopt platform functionality. This new portal reduces developer friction and saves development time by consolidating Looker's developer resources (documentation, tutorials, sample code, examples etc.) and making them easy to find. Some of the resources in the Developer Portal include overview guides and tutorials for Looker APIs and SDKs, Embedding, Components, Action Hub, Extension Framework, and the Looker Marketplace. It's also the new home for the Looker Community where developers can engage, ask questions and learn about upcoming events.

Looker's Extension Framework (part of the Developer Portal) reduces developer friction by empowering developers to create complete applications in record time. Developers get a great return on engineering effort—they focus on building great user experiences, and leave the DevOps, security, and hosting to Looker. "It took one developer one day to stand up an application using the Extension Framework! I've seen a lot of great Looker features built over the years. This has the potential to be the most groundbreaking."

Jawad Laraqui, CEO, Data Driven



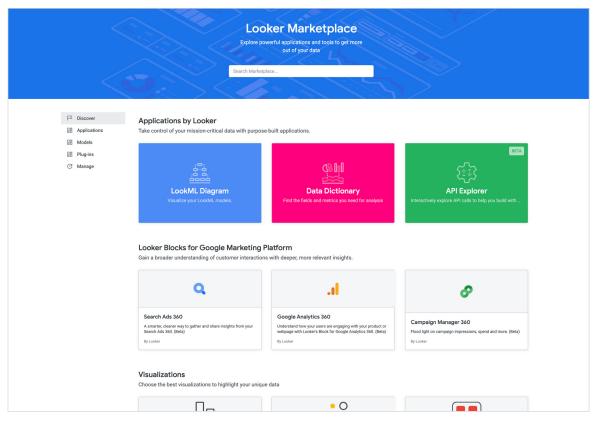
Immersive full-screen onboarding application built in the Looker UI by Data Driven.

The **API Explorer** is a new, interactive, and easy way to explore the Looker API, prototype requests in the language of your choice, and actually execute API calls. It provides detailed product documentation as well as helpful developer resources like interactive features and language specific information.

Looker Filter Components make it possible to add Looker's filter functionality into an embedded application or extension. Looker filter components can connect directly to a Looker dashboard and will update when changes are made to the filter in Looker, minimizing maintenance overhead. These components decrease application maintenance and overhead for developers, bring the analysts closer to product development, and enhance the interaction between users and their data. Leveraging the new development frameworks and tools, it's now faster and easier to build and distribute data applications within the **Looker Marketplace** – growing user engagement and creating new revenue opportunities for teams.

Accelerate the Business with Packaged Experiences

Looker customers can eliminate days, weeks or even months of development time with composable, packaged experiences from the **Looker Marketplace**. From financial operations to marketing, from retailers to SaaS providers, the expansion of Looker Marketplace offers new ways for new teams to get value from their data, fast, expanding use cases for cloud cost management, website analytics and first-party data activation into Google.



With the Looker Marketplace, users can discover, deploy, and manage any Looker package or custom application.

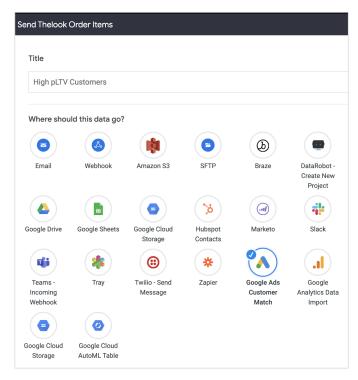
Highlights of the Marketplace this year are:

- Refinements for Looker Blocks[®] that make it easier to customize Blocks[®] to work with your data, even when it's messy or non-standardized
- New application extensions such as the Data Dictionary, LookML Diagram, and API Explorer, with many more to come
- New packaged solutions, installable with Looker Blocks[®] and Actions, deployed through the Marketplace

Looker's new solution for **Cloud Cost Management** allows FinOps professionals to efficiently manage spend across cloud providers with robust out of the box reporting for day-to-day needs and long-term optimization initiatives. It lets you easily identify the outlier high-cost problems and slow burn global inefficiencies faster. Blocks[®] for analyzing and managing costs across Google Cloud Platform, Amazon Web Services and Microsoft Azure are now available in the Looker Marketplace.

For marketing teams grappling with the deprecation of third-party cookies and increased urgency to leverage their company's first-party data for better segmentation, **Looker has expanded its offering for analyzing and activating customer-centric data:**

Companies who have upgraded to Google Analytics 4 can now easily deploy advanced analytics in Looker with the **Looker Block**[®] **for Google Analytics 4**, allowing them to dig into customer behavior and engagement across devices and platforms.



Looker's new Action for Customer Match allows marketers to create more targeted customer interactions.

Marketers can then use Looker to identify, build and easily send audiences to Ads, via the **new Action for Customer Match**. Leveraging first-party data in Ads, companies can re-engage existing customers or acquire new customers.

Alternatively, for a more complete understanding of customers within the Google Analytics console, customers can use the new **Action for Data Import** to push the richness of their first-party data into the tool.

Retailers with in-house transactional systems can use the **Looker Block® for Retail** to get a comprehensive overview of group and store performance, customer behavior, basket dynamics, and ultimately choose which customer segments or product bundles to promote.

Unleash More Insights for More People Their Way

Our goal at Looker is to make it easier for all types of users—analysts, admins, developers, and consumers—to work with Looker and extract insights from their data to make better business decisions.

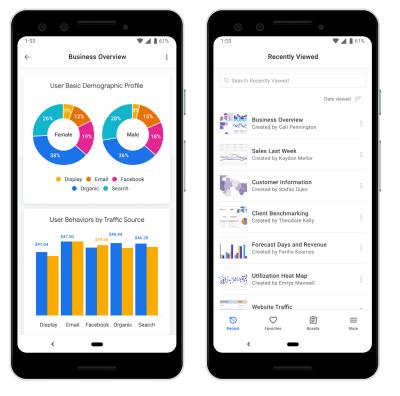
The **redesigned navigation** makes it faster for users to find and organize the content they care about resulting in approximately 2-5x performance improvement navigating between folders, boards, and dashboards. Users can now quickly switch between content from the sidebar, rather than navigating back to boards or folders landing pages. In addition, it limits the number of menu items users are viewing at any given time, allowing users to focus on their intended workflow.

) Explore > Develop	Welcome to Looker	From your organization Welcome to the new
Home	Recently viewed by you	customizable content sidebar. You have the ability to add and edit content that your entire organization will see.
 Favorites Boards + Marketing Sales 	Dashboard 9 Views, Created by User Dashboard 9 Views, Created by User Dashboard 9 Views, Created by User	Welcome to Looker 10! All new content management system, sharing, dashboards, explore, and even natural language data exploring!
Folders Folders Blocks Extensions	Dashboard Views, Created by User Views, Created by User Views, Created by User	y User
	Recently viewed at your organization	dashboards and receive real-time alerts and insights! Install now
	Dashboard 9 Views, Created by User Dashboard 9 Views, Created by User	

Looker's redesigned navigation makes it faster for users to find and organize content they care about.

With **Quick Starts**, both new and returning Explore users now have an exploration starting point pre-populated for common use cases. Quick Starts enable you to jump right into an analysis with a single click on the Explore page. From there, you can modify the selected fields to find your specific answers.





Looker mobile app provides users access to their data on the go in a secure and governed way.

		Row Limit 500 🔲 Totals
ŝ	Count of Days Since Arrival	鐐
32 21 34		Remove Filter
42 15		Pivot
26	% difference from previous % of column % of previous Rank of column	Quick calculations
25 23		Hide from Visualization
19 14		Remove Filled in Dates
	Running total	Copy Values Go to LookML

Quick creation for most commonly used table calculations.

The native **mobile app** (for both iOS and Android) is now GA, and allows everyone to get insights on the go on their mobile devices. The app is available in 22 languages, and supports biometric authentication like face or touch ID.

We are also bringing our **trendlines** feature to GA. Users can now easily create trend lines from the Y-Axis menu in the Explore interface and visualize a trend for all their data points over a period of time. Trendlines are now backed by the vega-statistics library for more consistent results on a wide variety of data.

Looker 21 also enables faster, simpler, and more intuitive on-the-fly analysis and exploration by streamlining the **custom fields and calculations** workflow. These improvements enable everyone to ask and answer questions of their data more efficiently by both streamlining previously complex and time-consuming analyst workflows and making it easier for investigators to self-serve.

It is now easier than ever for organizations that run on Microsoft applications to incorporate governed data into their daily workflows. The **Looker Action for Microsoft Teams** pushes data from the Looker bot into any conversation on a scheduled, one-off or trigger-based cadence.

Deliver Data Experiences at Scale Anywhere

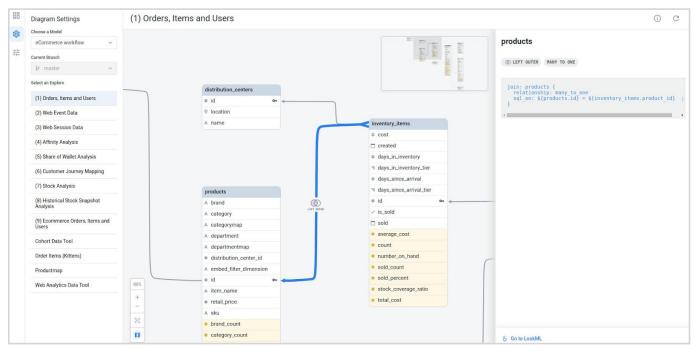
Continued investments are being made to support high scalability requirements by simplifying management, improving performance, and providing more deployment choices. Modeling data is easier, and connecting to and analyzing large datasets is even more performant.

Looker is committed to a multicloud approach that gives organizations choice, and now supports Looker being hosted on **Microsoft Azure**, in addition to Google Cloud and AWS. By hosting Looker in the cloud of their choice, customers can improve performance, consolidate cloud deployments, meet compliance requirements, and better fit analytics into their cloud strategy.

The **automatically generated LookML model** is now more robust and accurate, further simplifying the process of getting trusted insights from data, quickly, through Looker. Users can now choose specific schemas, tables, and fields to create Explores.

The **LookML Diagram** is a new application developed on the Extension Framework using Looker components. Deployed through the Looker Marketplace, the LookML Diagram allows data teams to more quickly develop robust and accurate data models, reduce errors, and easily visualize their work. At its core, the LookML Diagram is an entity-relationship diagram of a LookML model that visually depicts relationships between LookML objects. "Looker fits well with this philosophy because we can choose our preferred database and leverage integrations to make our data accessible and actionable. Overall. Google is making a lot of progress in multi-cloud which allows you to not have to think about the vendor and just adopt what you need to do the job well."

Dave Johnson, VP of Informatics, Data Science, and AI at Moderna



Visualize the LookML code in an interactive manner with the LookML Diagram.

PDTs (persistent derived tables) are typically used to improve query performance and reduce query costs, and can now be built incrementally to further improve query efficiency. When used to build tables based on data such as event streams, **incremental PDTs** can dramatically reduce query resource consumption.

We hope these latest additions and enhancements will improve your organization's ability to get more value from data and help drive your business forward. We're always listening, as your feedback helps us to continue to evolve Looker to better support every aspect of your business, and help you to find true power in your data.

