

Website Modernization with Generative AI on Google Cloud



Welcome to this module on website modernization. In this module, you'll learn about website modernization, and how you can implement it by transforming the website user experience with generative AI.

Click the first lesson—or the **Start Course** button—to begin.

WEBSITE MODERNIZATION

-  [What's in It for Me?](#)
-  [What is Website Modernization?](#)
-  [Areas of Website Transformation with Gen AI](#)
-  [Tools to Analyze Website Content and Performance](#)
-  [What Did I Walk Away With?](#)

TRANSFORM THE SEARCH AND NAVIGATION EXPERIENCE OF YOUR WEBSITE

- ☰ What's in It for Me?
- ☰ Vertex AI Search
- ☰ Implement Vertex AI Search
- ☰ Enhance Website Navigation with Vertex AI
- ☰ What Did I Walk Away With?

What's in It for Me?

Welcome to the *Website Modernization* module. In this module, you'll learn about website modernization, and how you can implement it by transforming the website user experience with generative AI.

Let's begin by first introducing the learning objectives of this module on website modernization.

In this module, you:



- ✓ Understand the use of generative AI in website modernization.
- ✓ Review the areas where Gen AI can be used to transform the website user experience.
- ✓ Review the tools to analyze website content and performance.

What is Website Modernization?

A website is a critical touchpoint throughout the consumer journey.

Click each marker to learn more.

Cymbol Bank

Popular searches

Send a wire transfer

Credit card offers

Open a new account

Choose from these great credit cards

Don't miss out on these offers. Apply now on this page to take advantage of these offers.

Cymbol Active Cash® Card

Earn unlimited 2% cash rewards on purchases

Welcome offer: Earn a \$200 cash rewards bonus when you spend \$1,000 in purchases within 3 months. 0% intro APR for 15 months from account opening on purchases and qualifying balance transfers. 20.24%, 25.24% or 29.99% variable APR thereafter. Balance transfer mode within 120 days qualify for the intro rate and fee.

Cymbol Active Preferred® Card

Earn 3x points for many ways to keep life moving

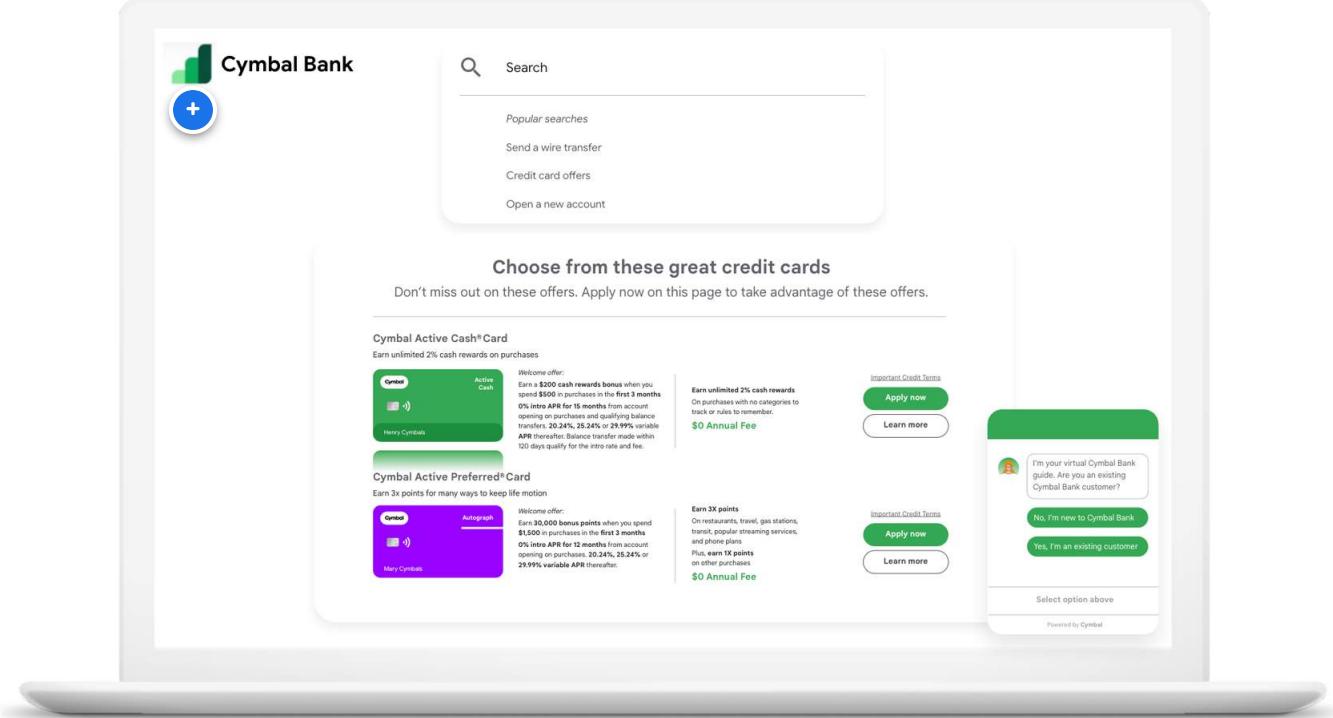
Welcome offer: Earn 30,000 bonus points when you spend \$1,000 in purchases within 3 months. 0% intro APR for 12 months from account opening on purchases. 20.24%, 25.24% or 29.99% variable APR thereafter.

Virtual Guide

I'm your virtual Cymbol Bank guide. Are you an existing Cymbol Bank customer?
No, I'm new to Cymbol Bank
Yes, I'm an existing customer.

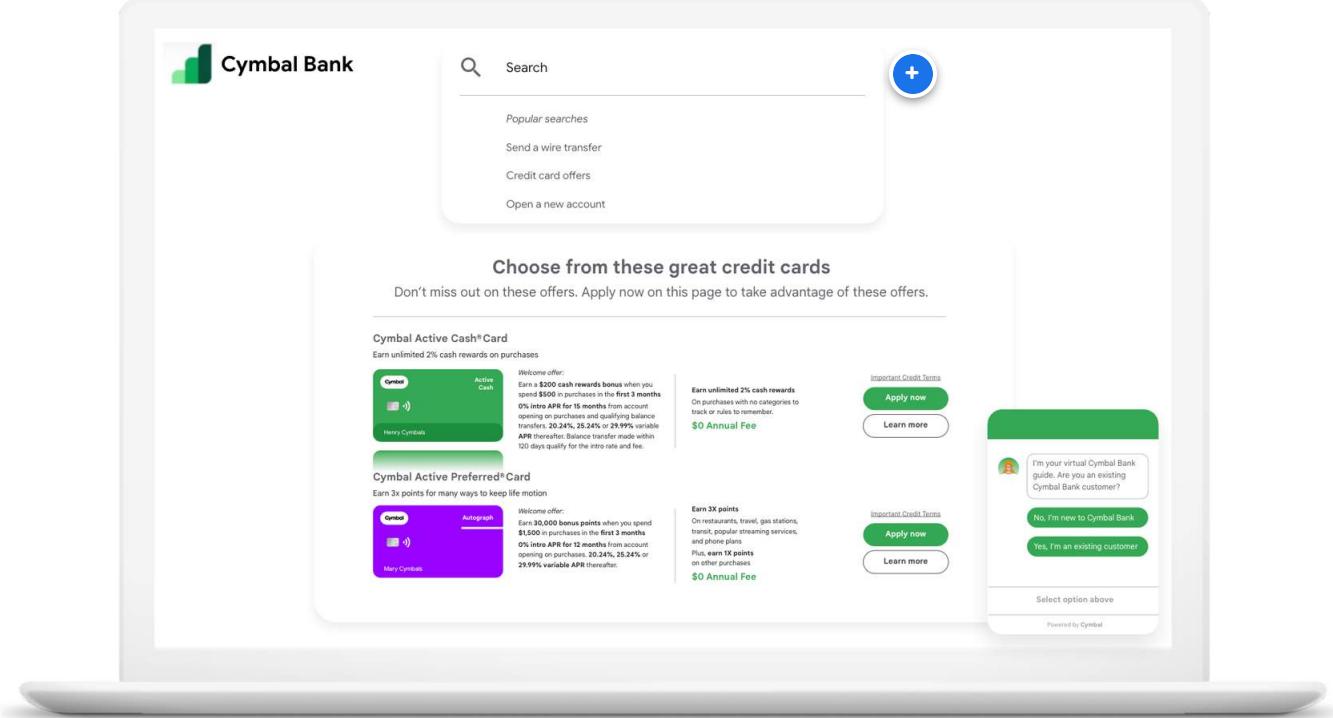
Select option above

Powered by Cymbol



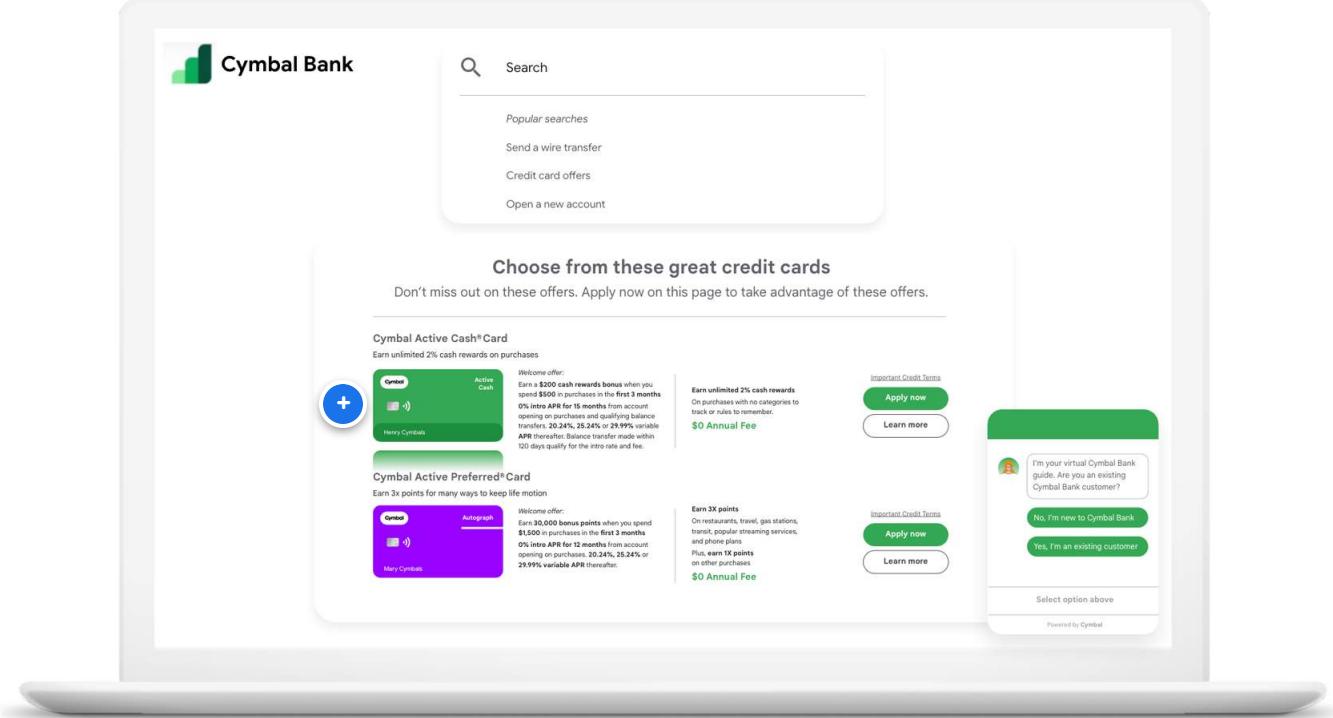
Brand aware

Help website users know who you are, and what you do.



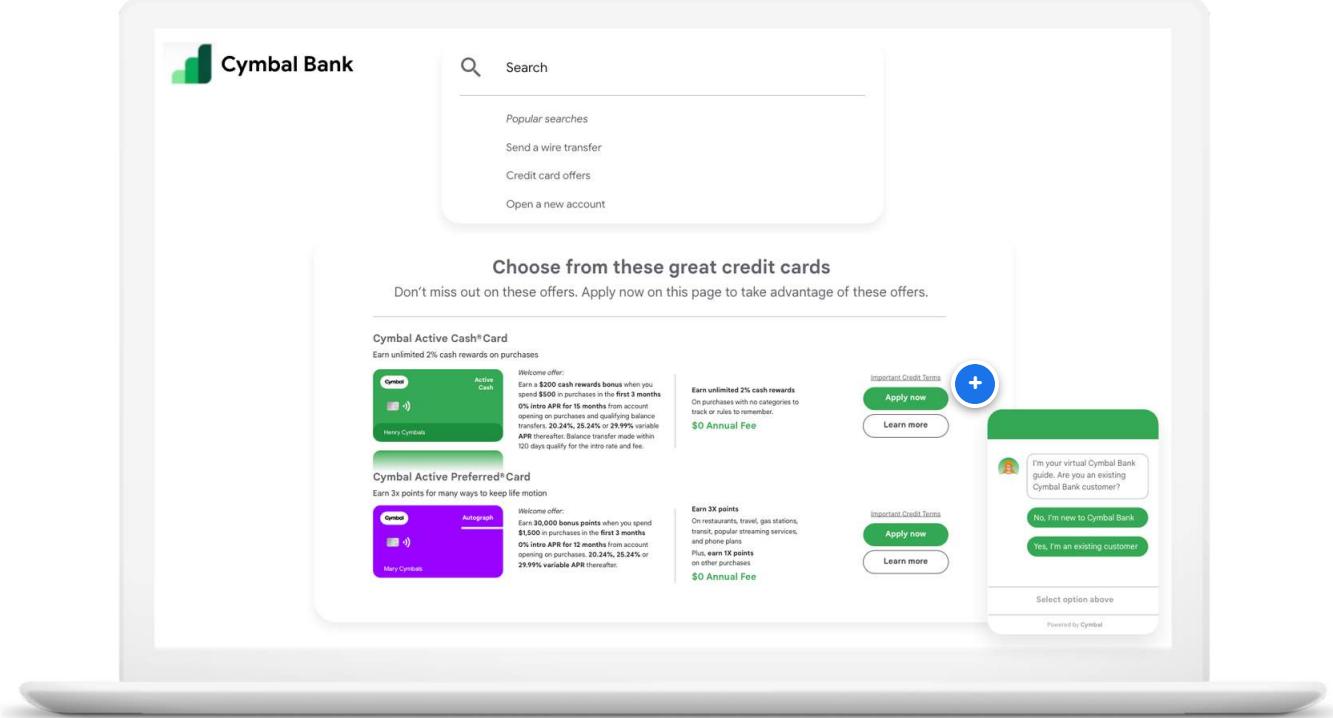
Discover

Help website users find the products and information they need.



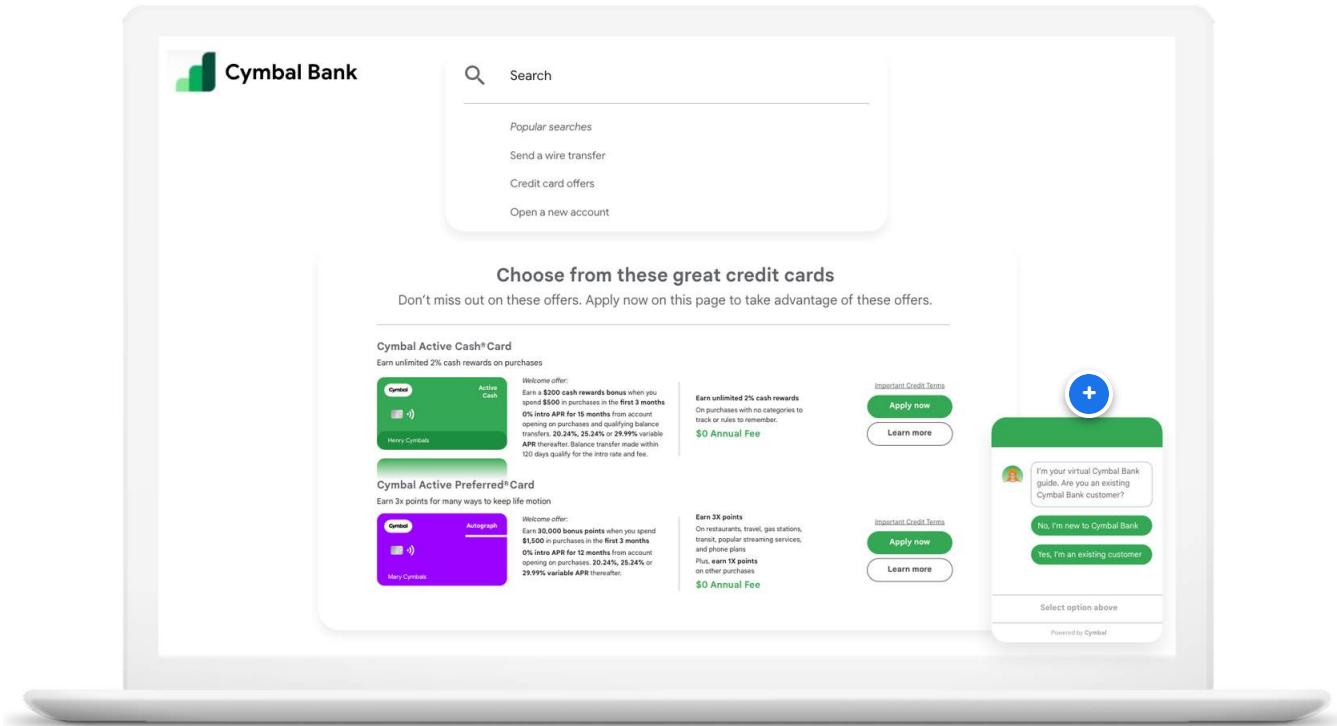
Engage

Help users understand and compare product and service offerings.



Convert

Help users purchase products and services conveniently and easily.



Retain

Help users quickly and easily resolve questions, and get support.

Websites play a big part in building customer relationships. They solve pain points across the customer journey, from first impression or awareness to discovery and engagement, and then to conversion and retention.

By applying generative AI capabilities to your website, you can modernize it and unlock value across the consumer journey.

Gen AI capabilities across the consumer journey

Click each button to expand the items and learn more.

Awareness

Gen AI capability:

- Content generation
- Content translation and localization

Business value:

- Brand awareness
- Market share
- Customer reach

Discovery

Gen AI capability:

- Conversational search with citations
- Product and service recommendations

Business value:

- Cross-sell and upsell opportunities

Engagement

Gen AI capability:

- Virtual agents
- Enhanced analytics

Business value:

- Customer satisfaction

Conversion

Gen AI capability:

- Transactional agents
- Personalized product suggestions

Business value:

- Time-to-conversion
- Cross-sell and upsell opportunities

Retention

Gen AI capability:

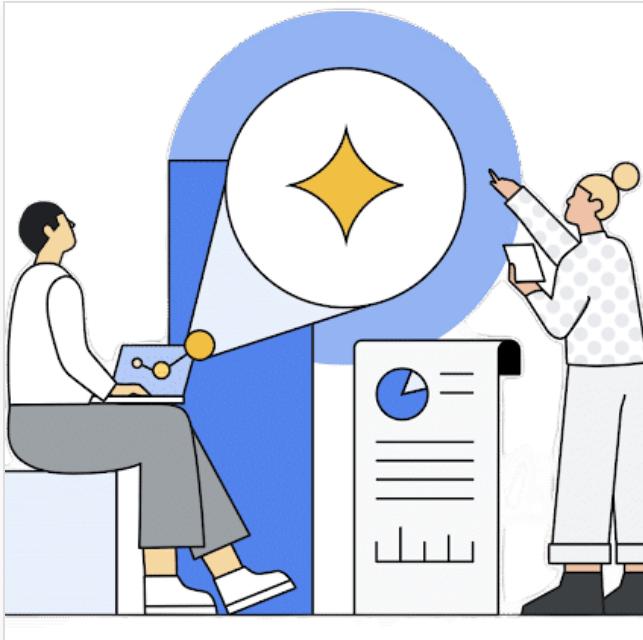
- Virtual agents
- FAQ with citations

Business value:

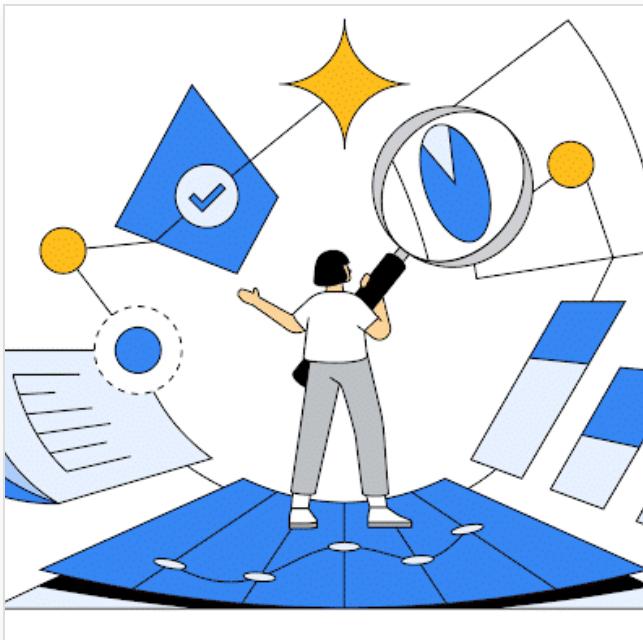
- Customer lifetime value
- Customer service costs

With Google Cloud's tools, you can embed Gen AI into your website and transform your website user experience in three areas:

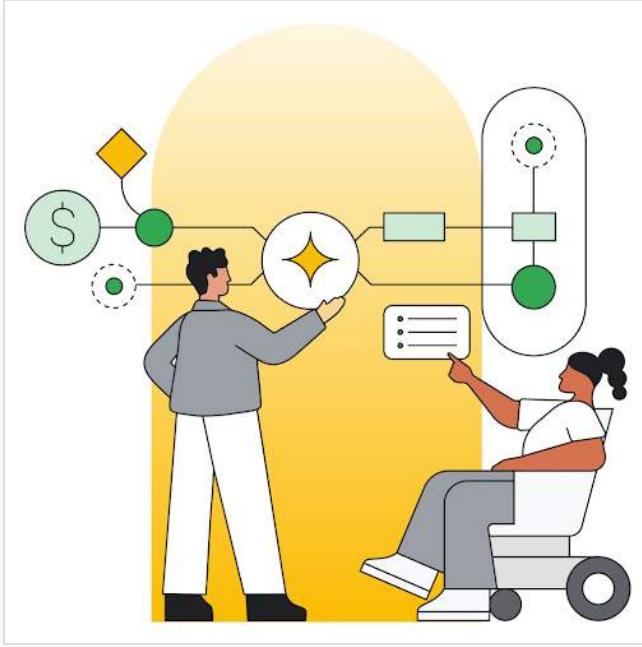
Click each flashcard to learn more.



Streamline content generation



Enhance web navigation



Improve self-service

We'll review these areas of website transformation in more detail in the next lesson.

Areas of Website Transformation with Gen AI

Let's review how you can transform the website user experience by embedding generative AI in three areas:

- Content generation
- Website navigation
- Self service

Content generation

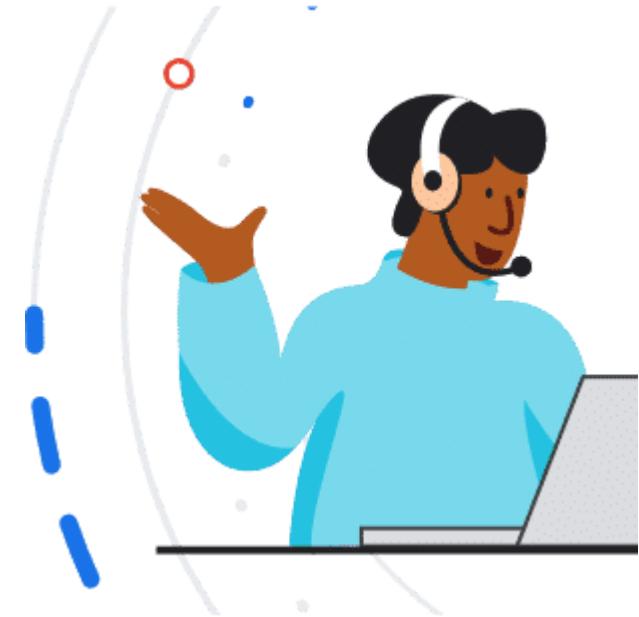
When creating and managing content for your website, consider these persona and their job functions:

Click each button to expand the item and learn more.

User —

Functions:

- Receive the best and most appropriate information when I engage with a website.
- Be able to easily use, discover, interact, and navigate the website.



Content management team

Functions:

- Create content that is engaging and helpful to website customers and users.
- Translate and localize the content to increase reach.
- Provide appropriate content to users at the right time.
- Review, approve, and publish content.



Customer experience and content performance analysts

Functions:

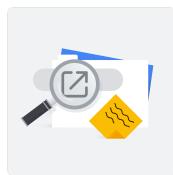
- Identify content segmentation and performance.
- Identify content that needs improvement.



To implement these functions, there are multiple Google Cloud tools available:



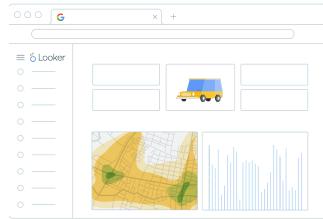
Vertex AI



Search and
Conversation



BigQuery



Looker

User journeys

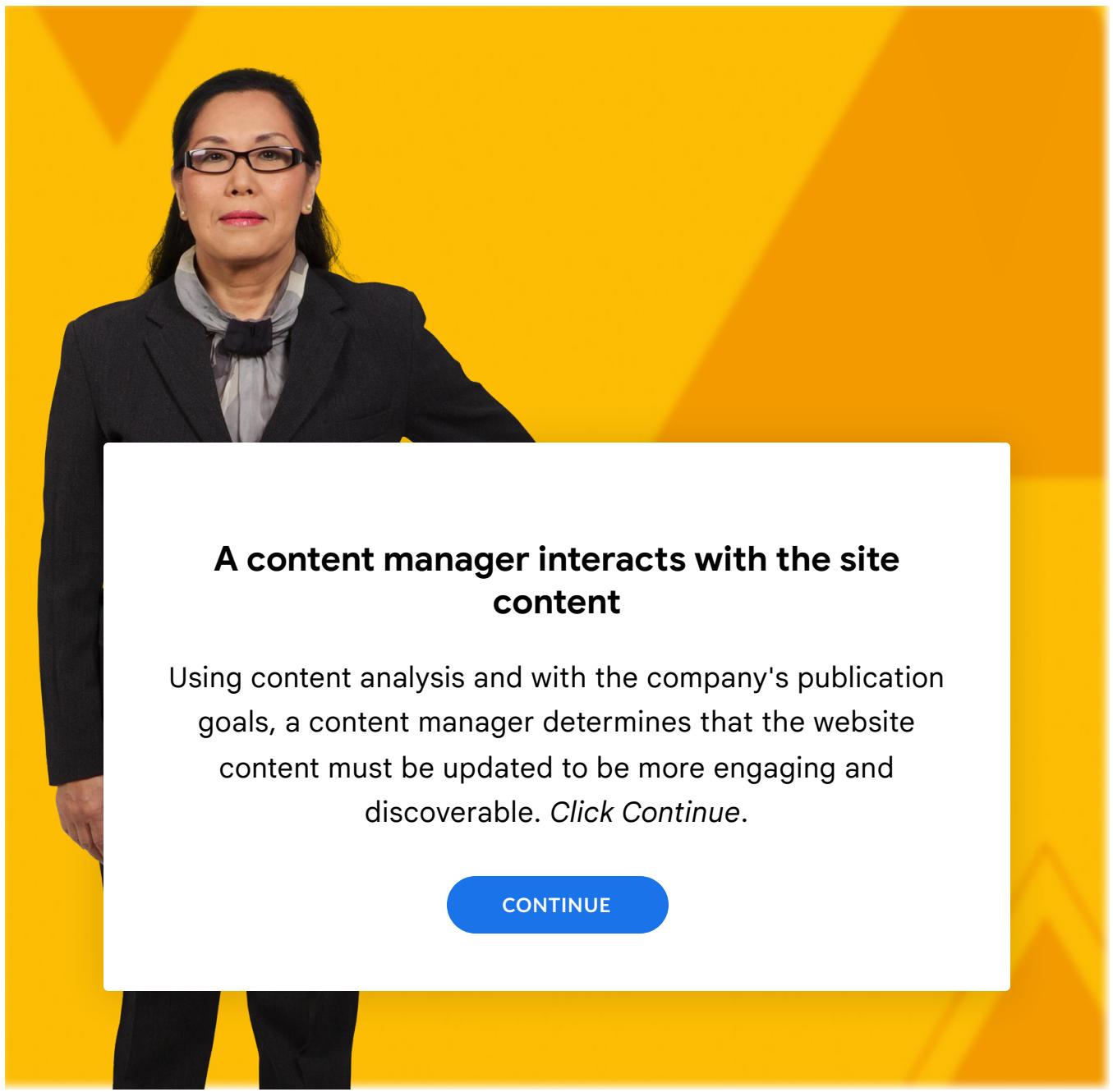
Let's review some of the critical user journeys that exist when transforming your website.

1. Streamline content generation

Generate high-quality website content that is tailored to specific businesses and regions.

Some example use cases include:

- Generate text, audio, and images to describe product information more effectively.
- Localize and translate content to make information relevant to a user's region.
- Continuously improve website content and performance with a unified view of the customer.



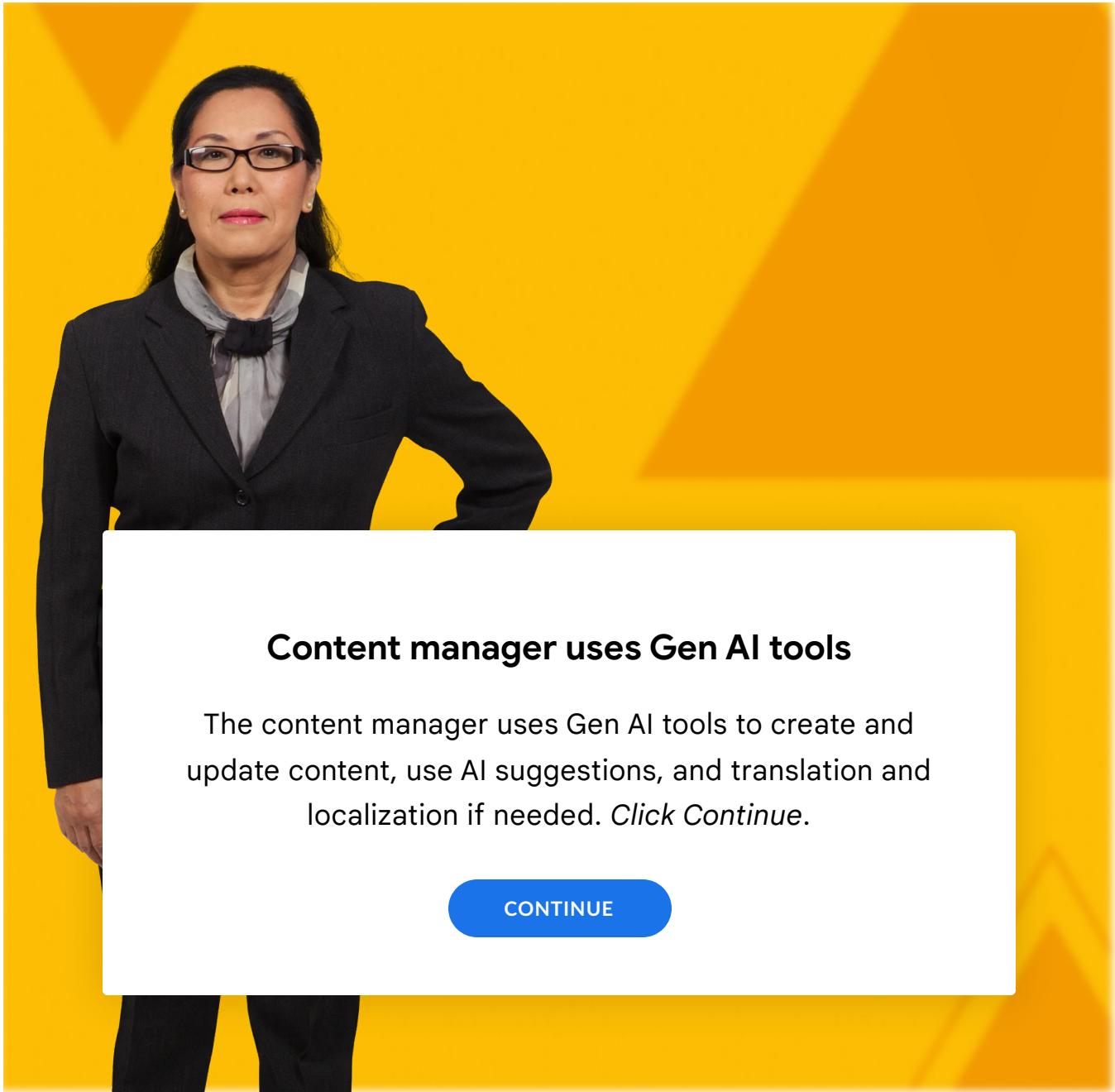
A content manager interacts with the site content

Using content analysis and with the company's publication goals, a content manager determines that the website content must be updated to be more engaging and discoverable. *Click Continue.*

[CONTINUE](#)

Scene 1 Slide 1

Continue → Next Slide

A professional woman with dark hair and glasses, wearing a dark blazer over a patterned blouse, stands against a bright yellow background. She has one hand on her hip. A white rectangular overlay box is positioned in front of her torso. Inside the box, the text "Content manager uses Gen AI tools" is displayed in bold black font. Below it, a paragraph of text reads: "The content manager uses Gen AI tools to create and update content, use AI suggestions, and translation and localization if needed. Click Continue." At the bottom of the box is a blue rounded rectangle containing the word "CONTINUE" in white capital letters.

Scene 1 Slide 2

Continue → Scene 2 Slide 1



Scene 2 Slide 1

- 0 → Scene 1 Slide 2
- 1 → Scene 2 Slide 2

Content is updated and published.

START OVER



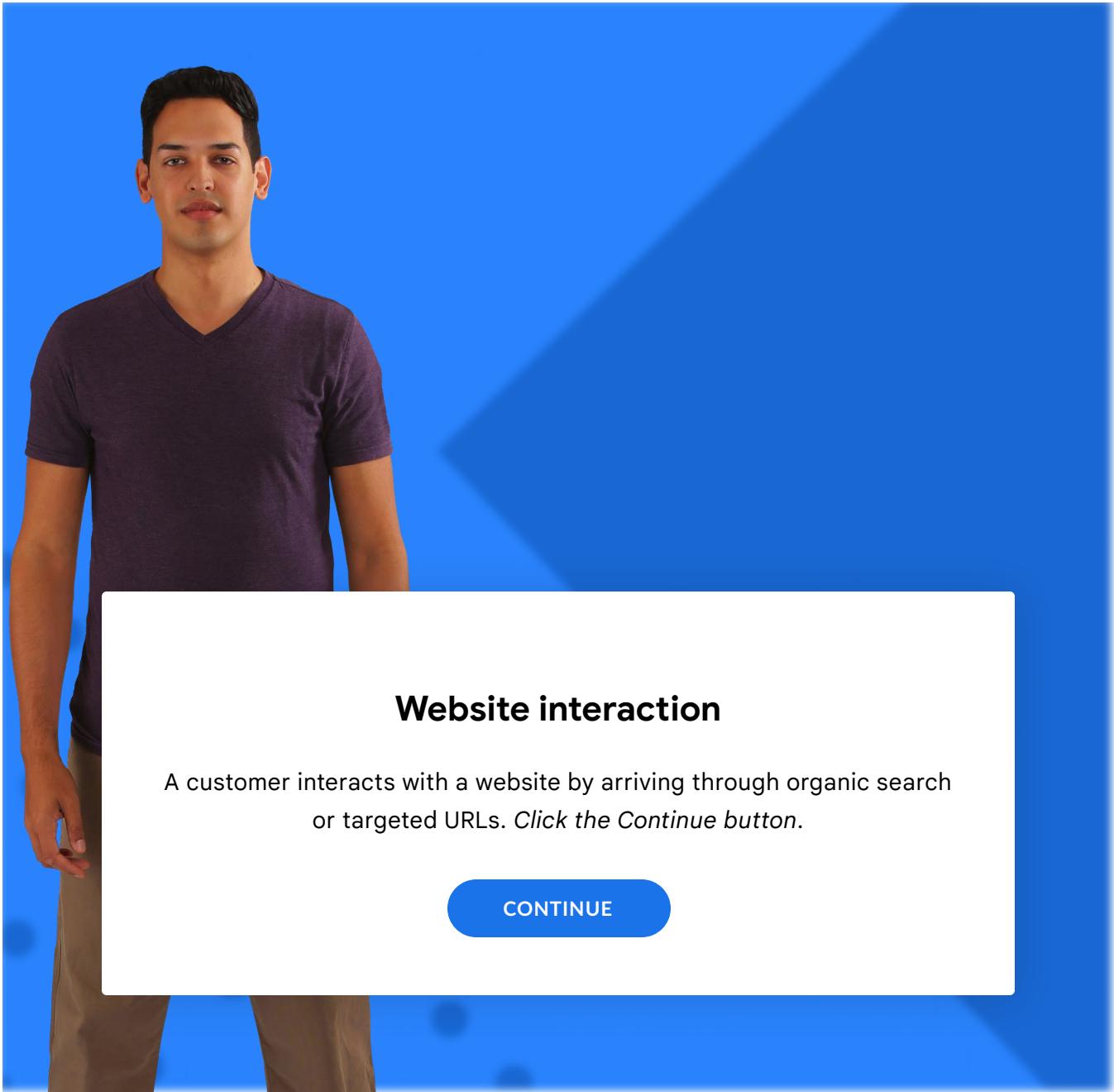
Scene 2 Slide 2

Continue → End of Scenario

2. Enhance website navigation

Enable customers and users to find the most helpful information efficiently. Some use cases include:

- Build a next-generation search and discovery web experience.
- Answer questions from web and chat users in human-like ways.
- Generate grounded responses based on customer data.



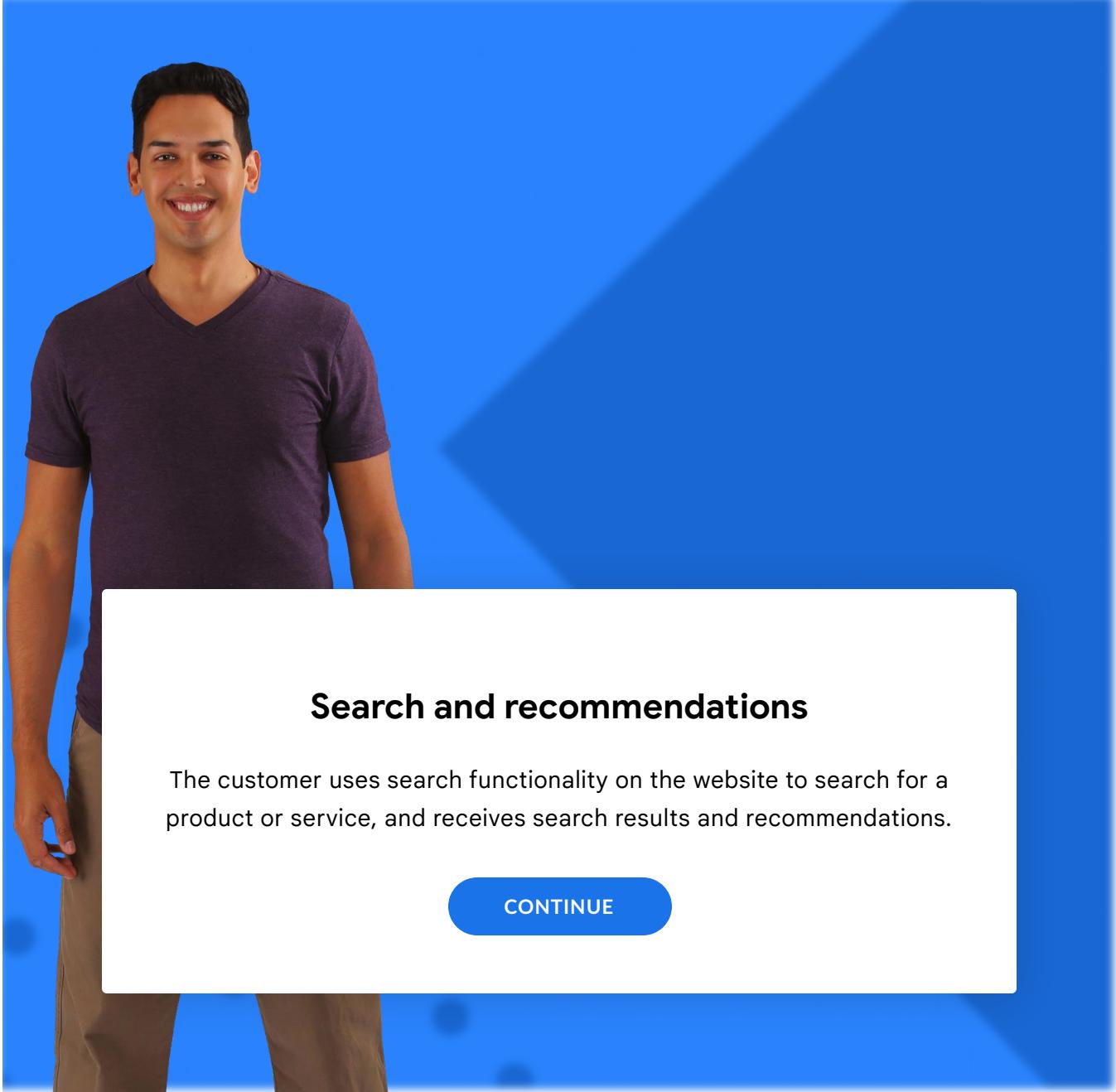
Website interaction

A customer interacts with a website by arriving through organic search or targeted URLs. *Click the Continue button.*

[CONTINUE](#)

Scene 1 Slide 1

Continue → Next Slide



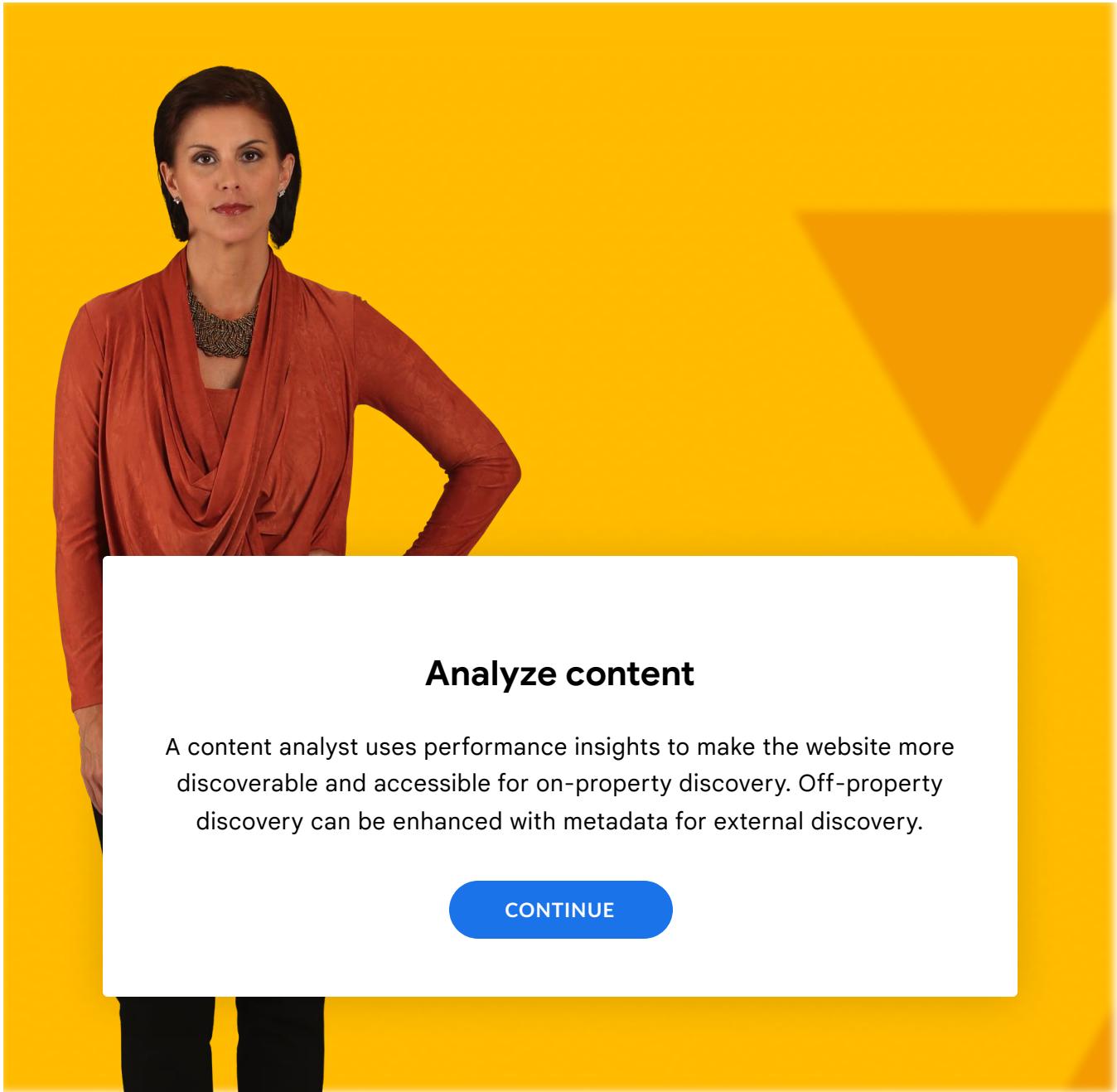
Search and recommendations

The customer uses search functionality on the website to search for a product or service, and receives search results and recommendations.

[CONTINUE](#)

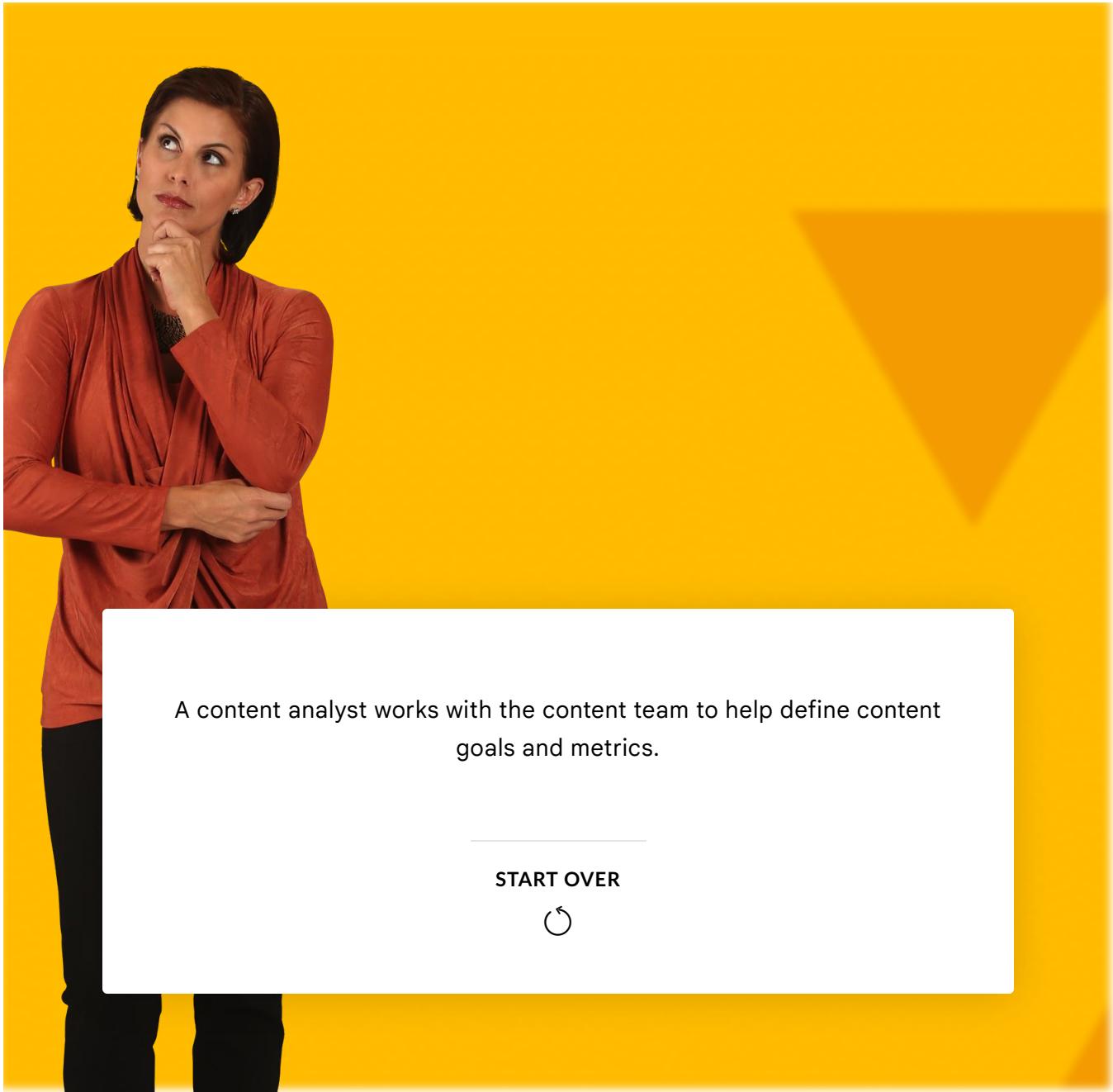
Scene 1 Slide 2

Continue → Scene 2 Slide 1



Scene 2 Slide 1

Continue → Scene 2 Slide 2



A content analyst works with the content team to help define content goals and metrics.

START OVER



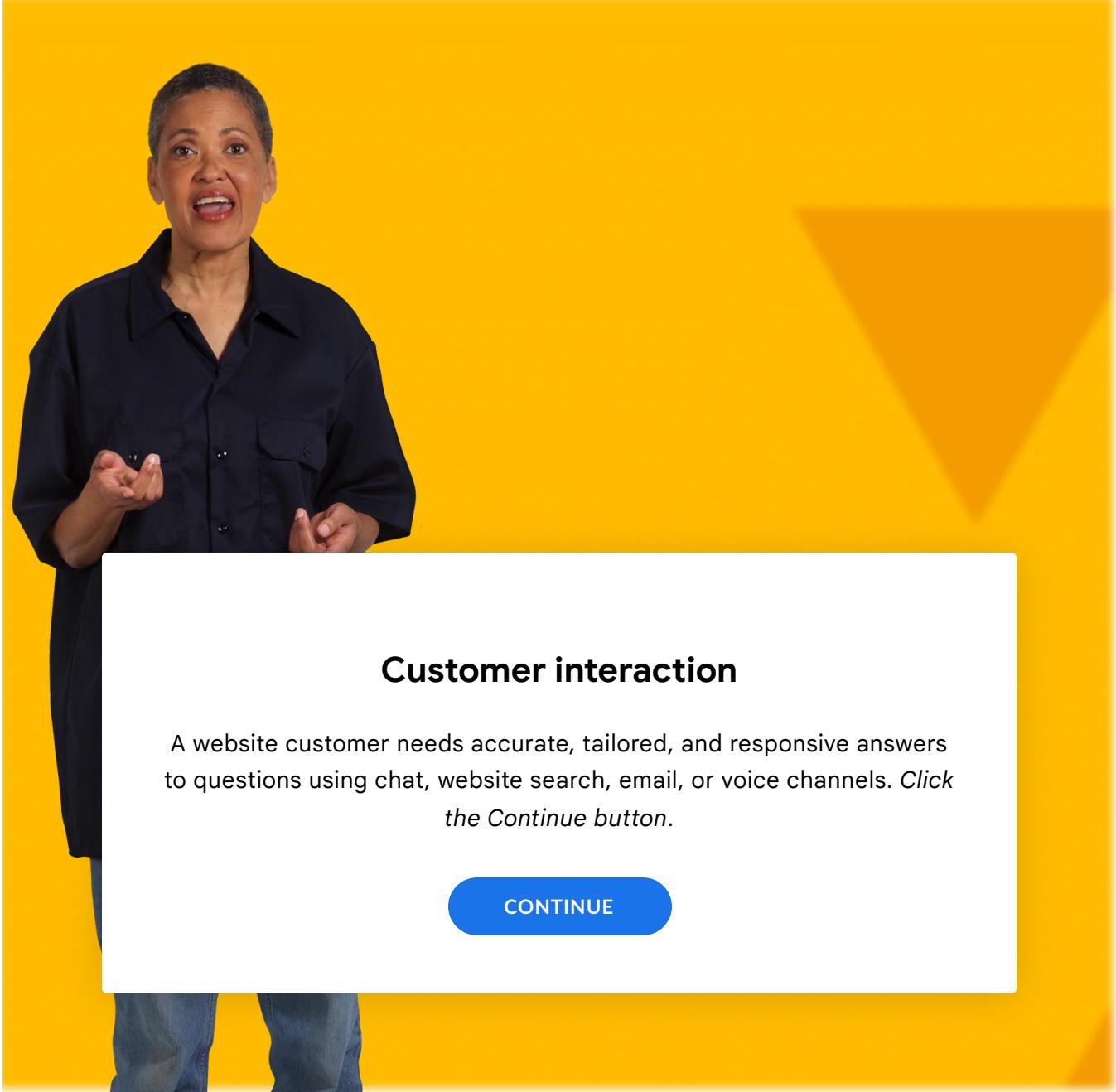
Scene 2 Slide 2

Continue → End of Scenario

3. Improve self-service

Structure websites to ensure customers transact, get help, and take action. Some use cases include:

- Improve customer steering with AI and natural language understanding.
- Deploy generative AI to retrieve information and submit basic transactions.
- Control a virtual agent's responses and interaction with users.



Scene 1 Slide 1

Continue → Next Slide

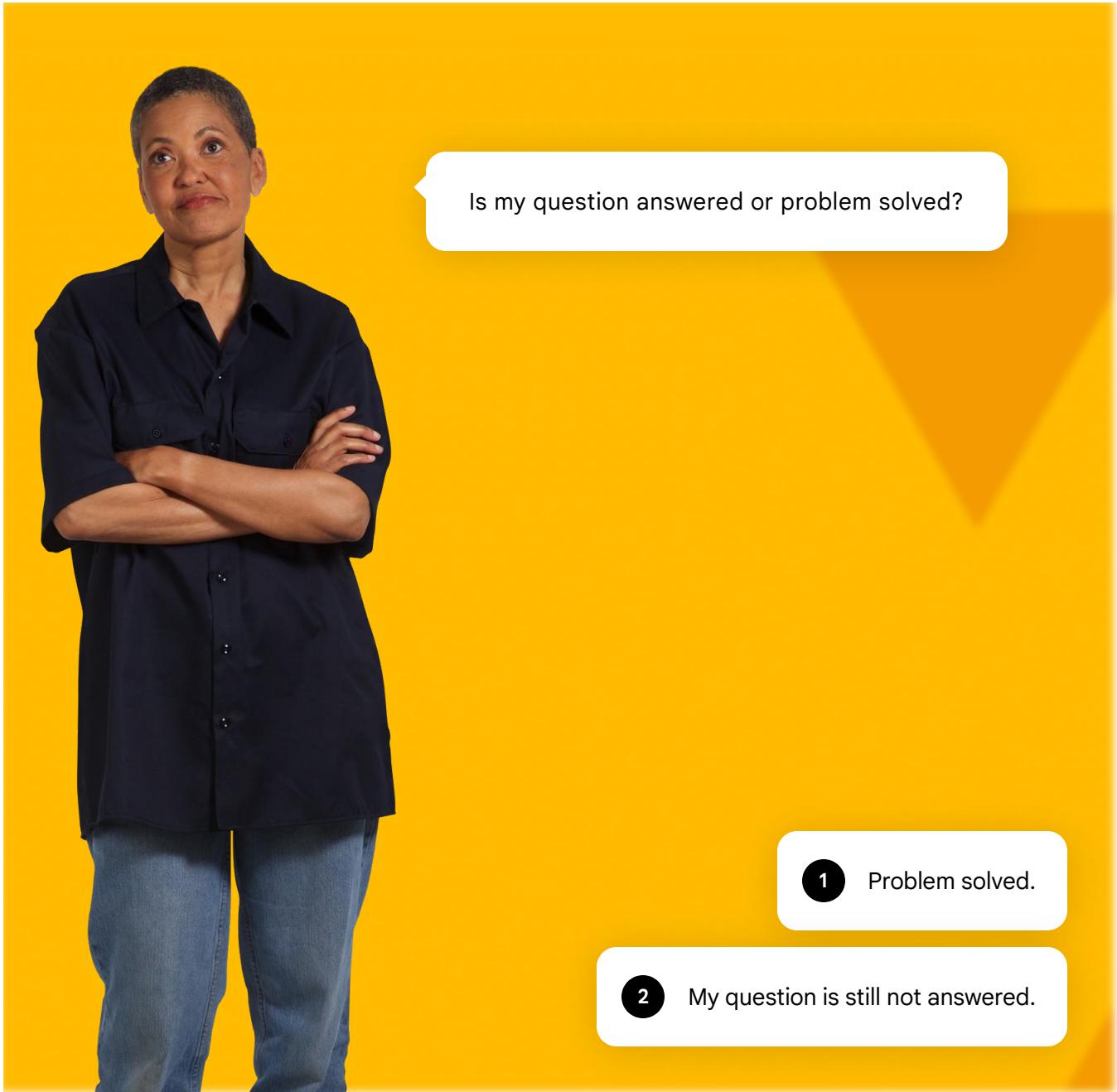
Automation systems

An automation system that is powered by data from backend systems and brand catalogs is able to provide automated personalized responses.

CONTINUE

Scene 1 Slide 2

Continue → Next Slide



Is my question answered or problem solved?

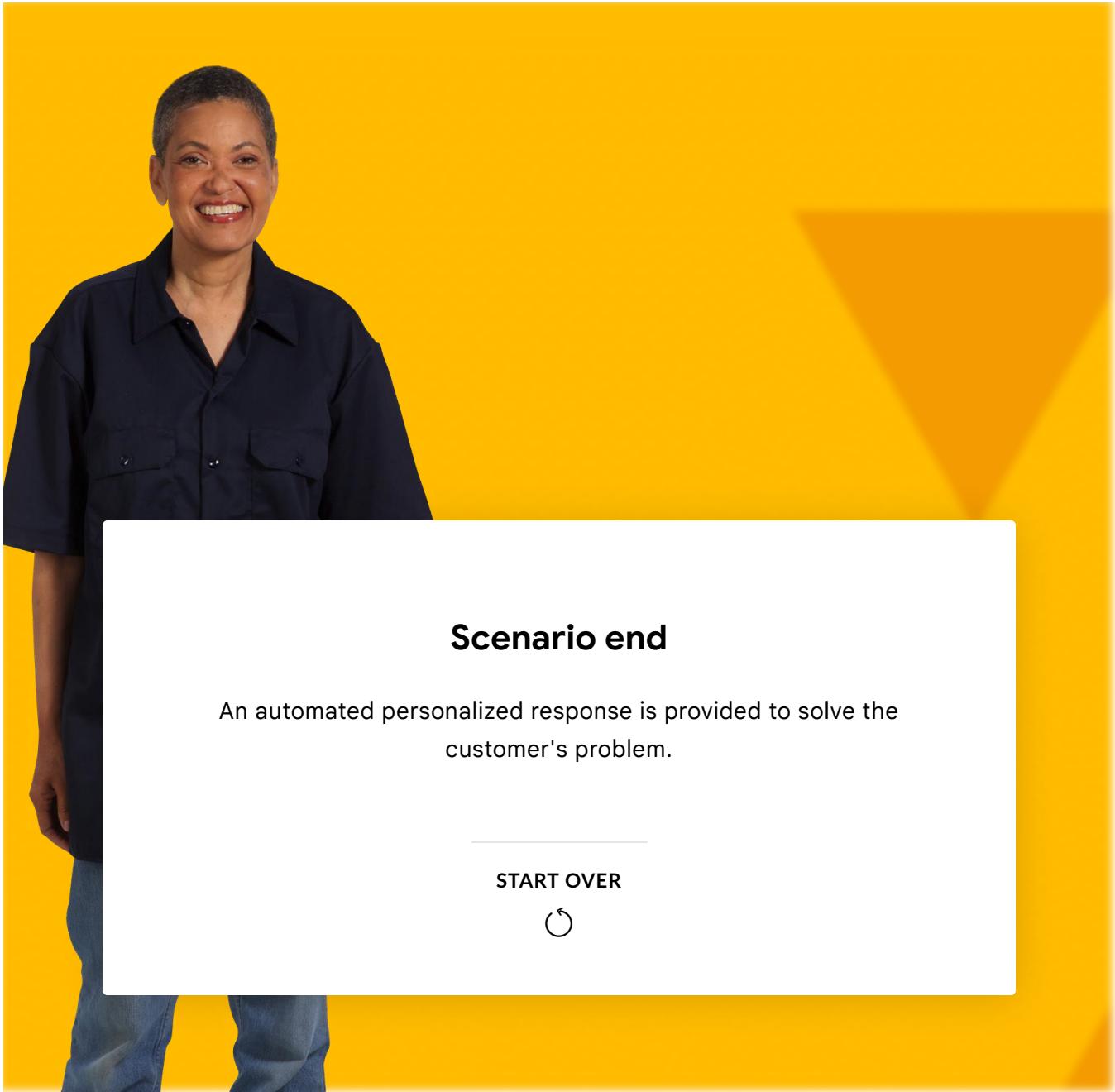
1 Problem solved.

2 My question is still not answered.

Scene 1 Slide 3

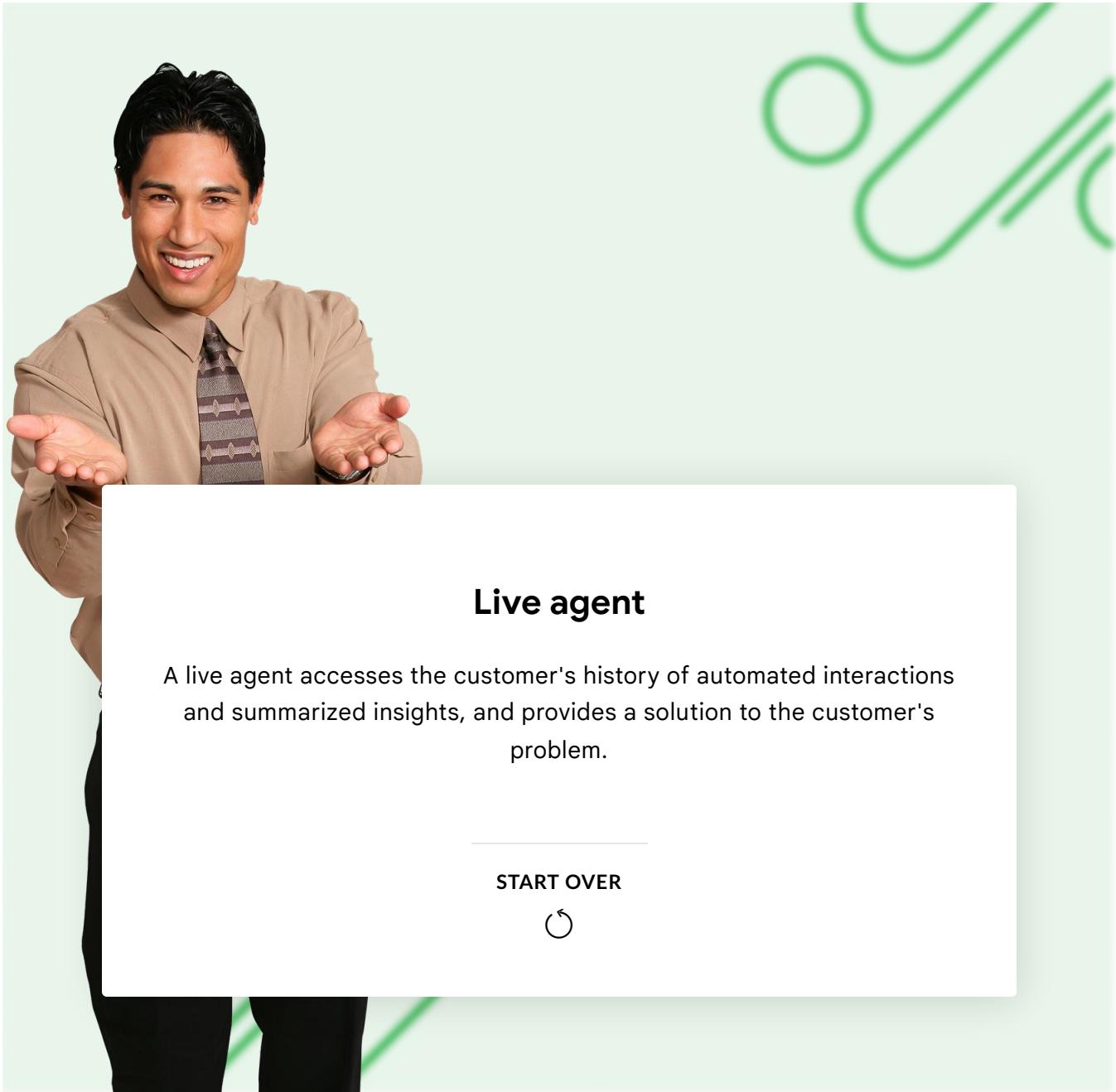
0 → Scene 1 Slide 4

1 → Scene 2 Slide 1



Scene 1 Slide 4

Continue → End of Scenario



Live agent

A live agent accesses the customer's history of automated interactions and summarized insights, and provides a solution to the customer's problem.

START OVER



Scene 2 Slide 1

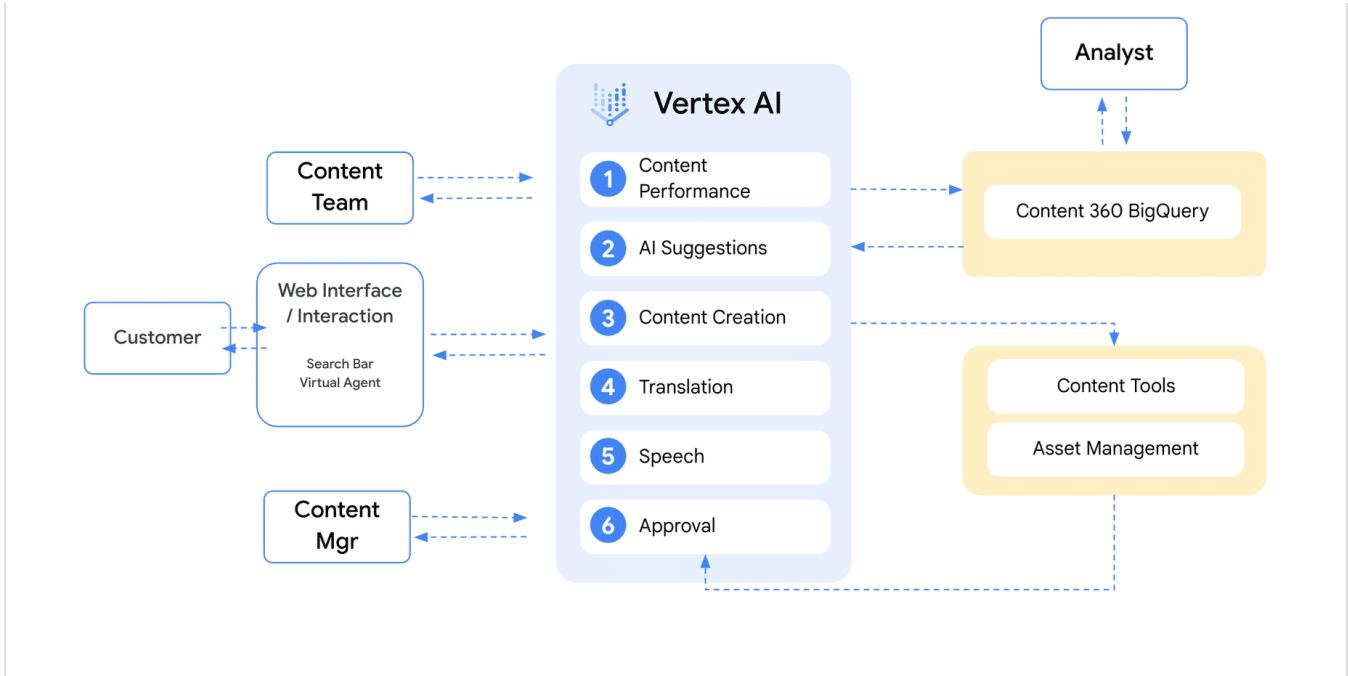
Continue → End of Scenario

Google Cloud's Gen AI capabilities and tools

Here is an overview of the Google Cloud Gen AI capabilities and tools available across these user journeys:

Click each tab to learn more.

STREAMLINE CONTENT GENERATION	ENHANCE WEB NAVIGATION	IMPROVE SELF-SERVICE
<ul style="list-style-type: none">• Use Vertex AI to:<ul style="list-style-type: none">◦ Create and translate the content using the Translation API.◦ Generate images from text prompts using Imagen on Vertex AI.◦ Generate captions for product descriptions from images.◦ Generate natural language text content (e.g., blog posts) using the Gemini API.• Use Gemini for Google Workspace to write and refine content for web copy.• Improve content with Customer 360 for BigQuery. <p>Content managers and website editors can create and edit content using AI suggestions, content translation, and speech processing. Users interact with a website using search and virtual agents.</p> <p>Content analysts use Content 360 and BigQuery tools to access and analyze website and other data stored in asset management systems to improve content and performance.</p>		



STREAMLINE CONTENT GENERATION

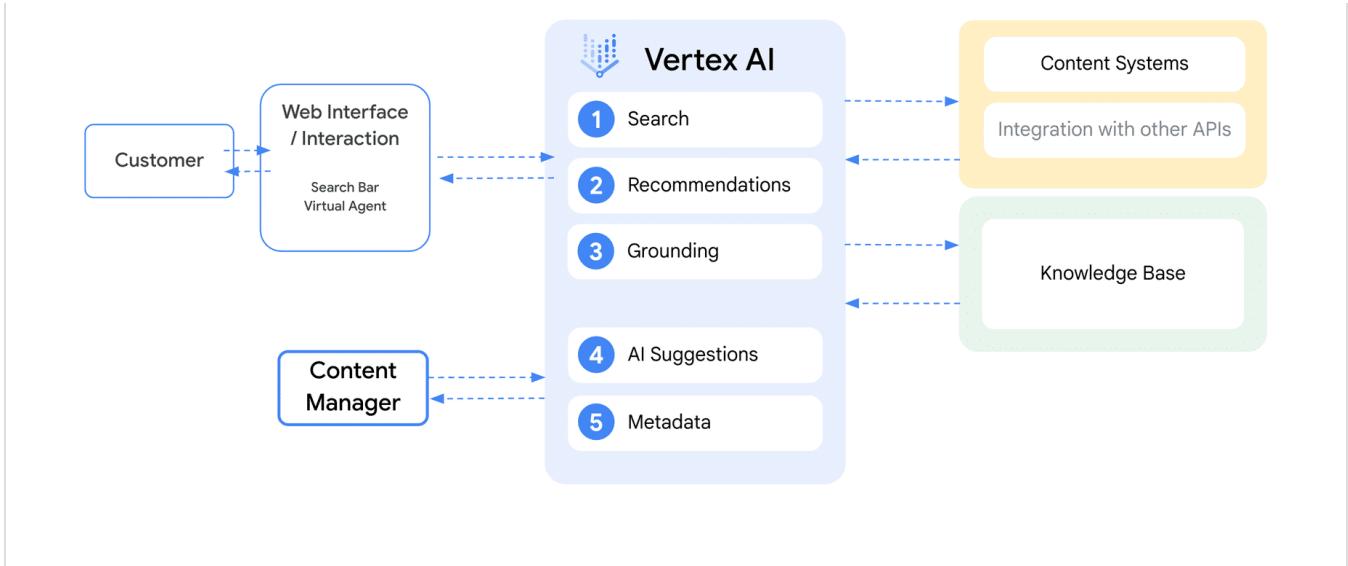
ENHANCE WEB NAVIGATION

IMPROVE SELF-SERVICE

- Use [Vertex AI Agent Builder](#) to:
 - Create search and recommendation apps for your website.
 - Generate grounded responses to complex queries based on your enterprise data.

Users interact through a web interface that includes a search bar and virtual agent. Grounded search results and recommendations are provided based on customers' enterprise data to enhance the user's navigation experience.

Content managers use AI suggestions and other metadata to create and update website content.



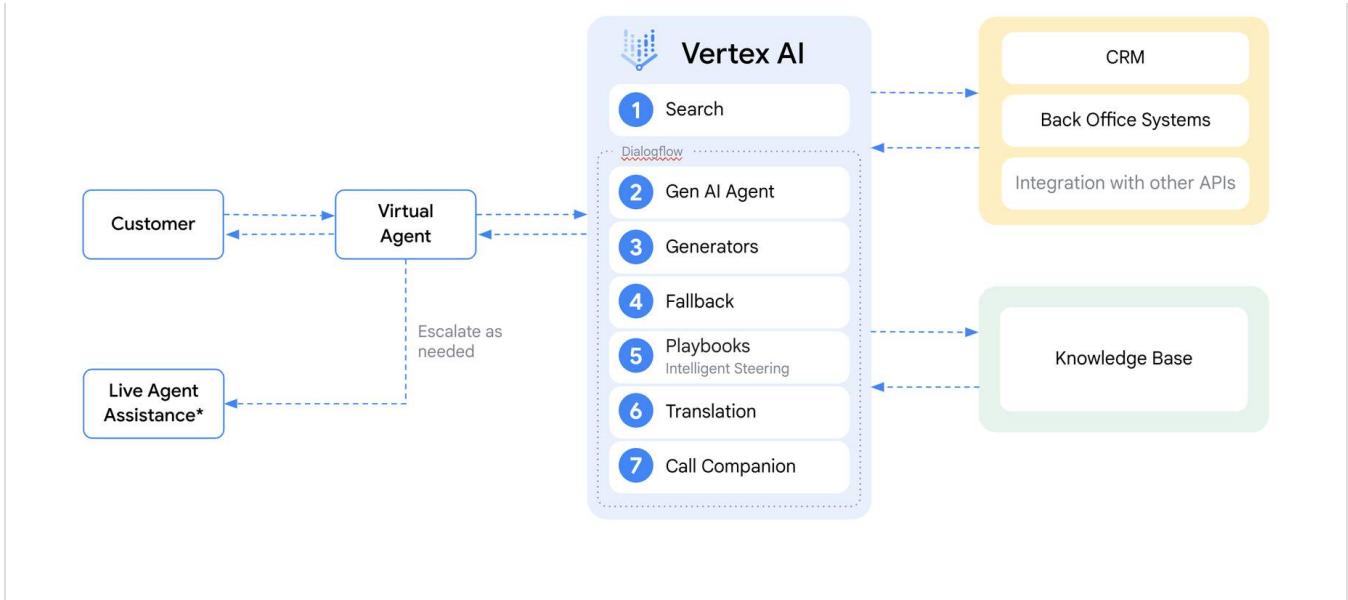
STREAMLINE CONTENT GENERATION

ENHANCE WEB NAVIGATION

IMPROVE SELF-SERVICE

- Use Vertex AI Search to provide results grounded from enterprise data.
- Use [DialogFlow](#) with [Generators](#) to create website chatbots with personalized, context-aware content.

Customers interact through a virtual agent for support and service. Vertex AI Search and capabilities in DialogFlow are used to power the agent. For escalation, customers can be connected to live agents.



Tools to Analyze Website Content and Performance

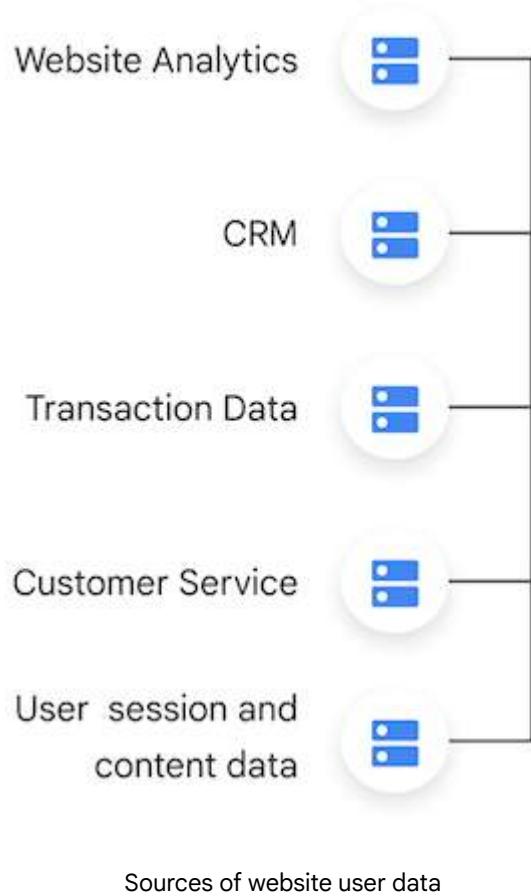
Content performance

To determine user engagement with a website or digital property, it's important to first define content goals. For example, a retail website might define a goal as the number of products added to a customer's cart, or a publisher website might define a goal as the number of news articles read.

Content analysts collaborate with the content management team to define content goals, and track and monitor goal metrics.

Data collection and integration

To build a unified view of your website customer, data is ingested from multiple sources.

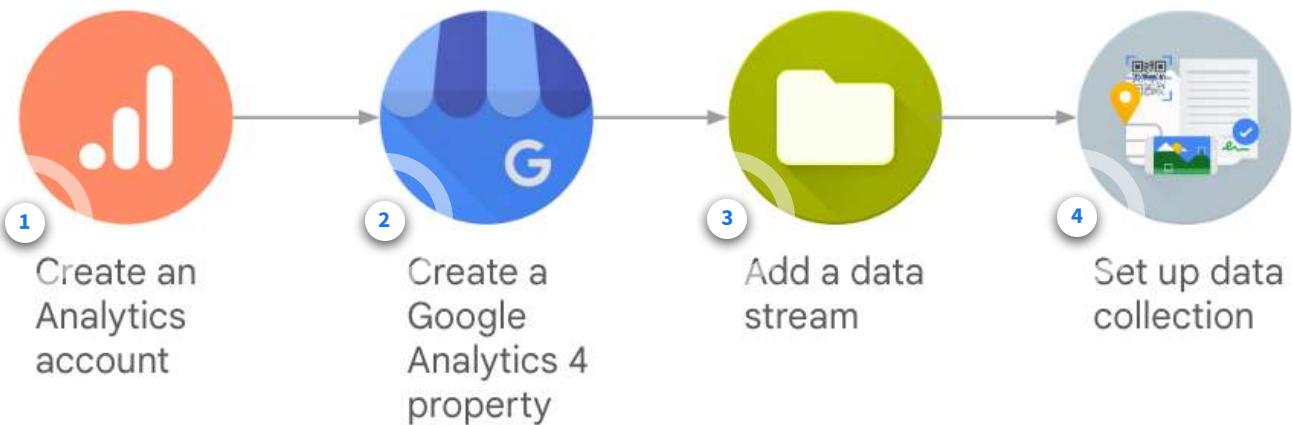


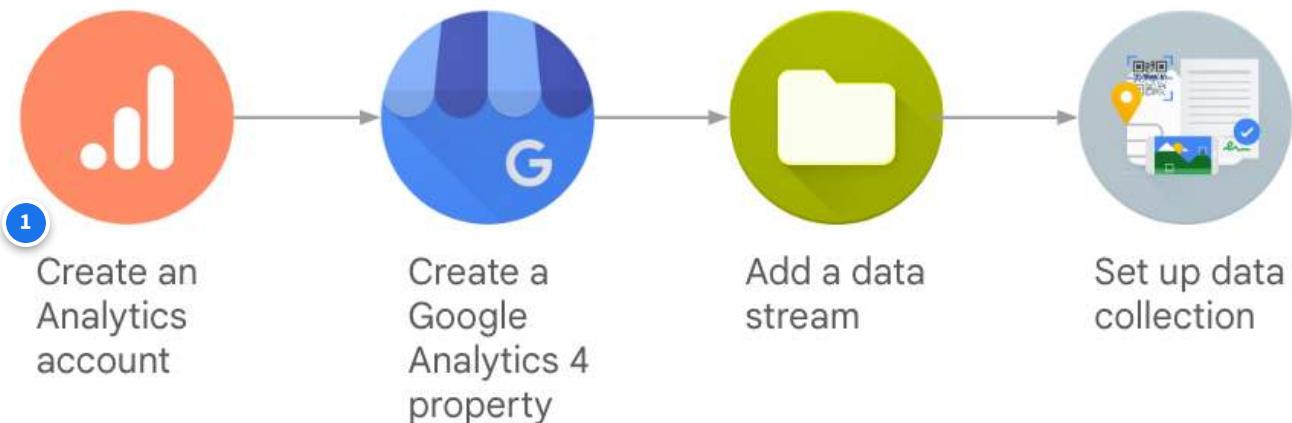
Analytics tools

Google Analytics 4

[Google Analytics 4](#) is an analytics service that lets you measure traffic and engagement across your websites and apps. To use Google Analytics 4, you have to:

Click each marker to learn more. For full details on the process, refer to the [documentation](#).

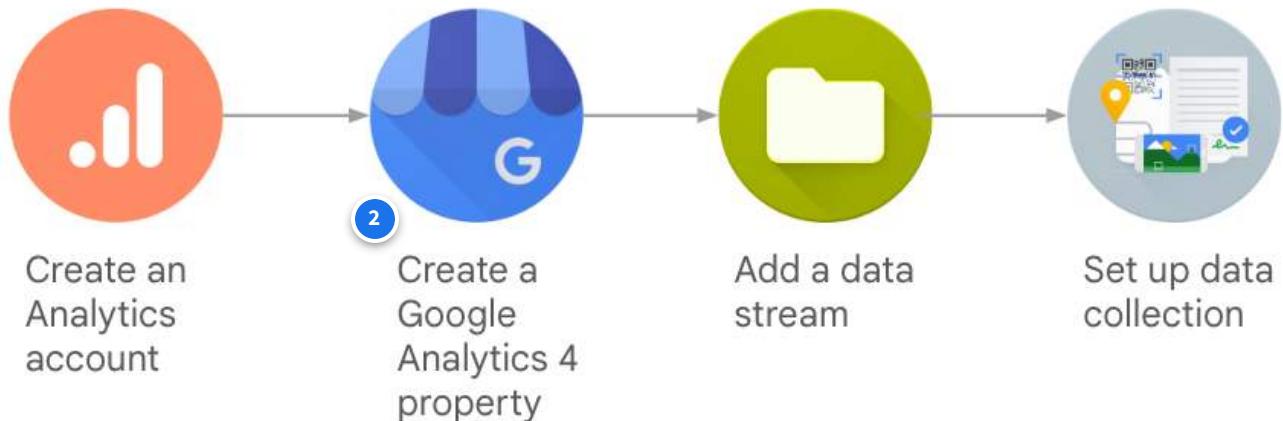




Create an Analytics account

Create an account for the website or app to collect analytics data. At <https://analytics.google.com>, to create an account:

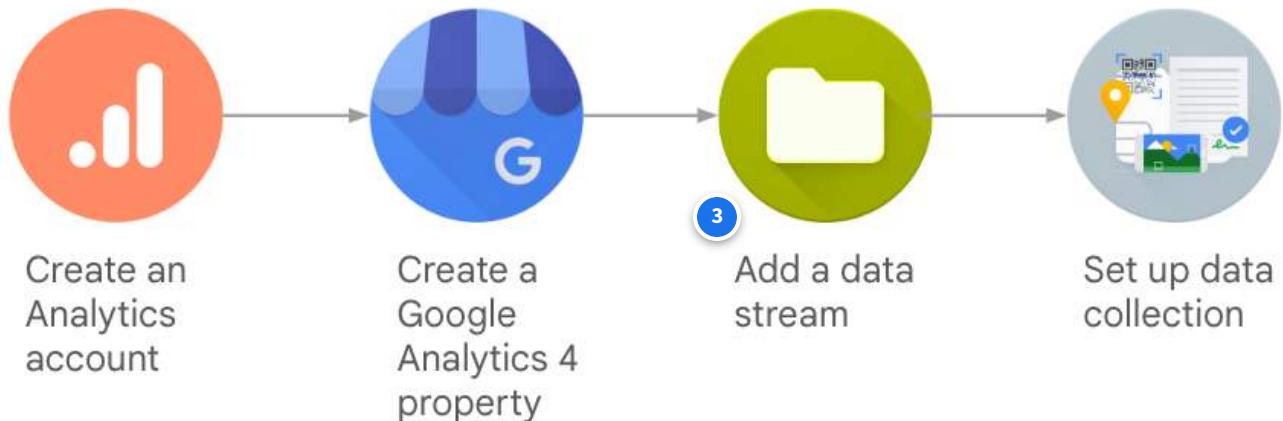
1. Provide an account name.
2. Configure data-sharing settings.



Create a Google Analytics 4 property

Create a property (your website) in Google Analytics 4 to provide information such as:

- Reporting time zone and currency
- Industry category and business size
- Intended use of Google Analytics

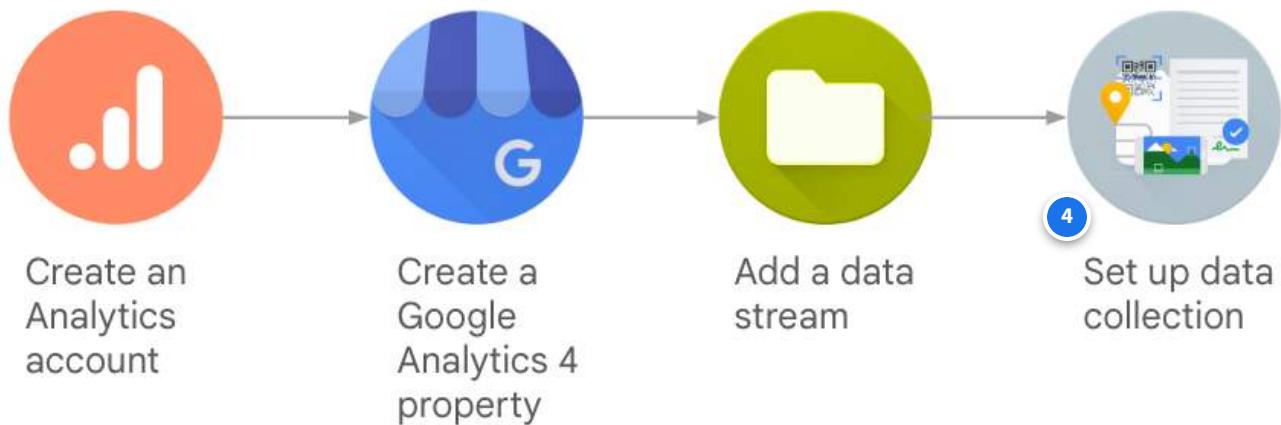


Add a data stream

To start collecting data, you must add a data stream to your Google Analytics 4 account.

For websites, you provide:

- The URL of your website
- A stream name
- An option to enable enhanced measurement events such as page views and other events.



Set up data collection

To begin seeing data in your GA 4 property, you must add a Google tag to your website.

One way to do this is to manually update your web pages with the Javascript snippet (gtag.js), which is available on the Google tag installation instructions page in your Google Analytics 4 account.

Vertex AI Analytics

Vertex AI analytics give you insight into the usage trends, search and recommendation quality, and user engagement of your app or website. The Vertex AI Agent Builder in the Google Cloud console provides an interactive dashboard experience that is powered by Looker.

GENERIC SEARCH AND MEDIA SEARCH APPS

MEDIA RECOMMENDATION APPS

- Per-search and per-session-search metrics are available.
- Metrics are based on search logs and user events.
- Metrics can be filtered by date range, query, and device type.

- Metrics are refreshed approximately every 6 hours.

GENERIC SEARCH AND MEDIA SEARCH APPS

MEDIA RECOMMENDATION APPS

- Per-recommendation metrics based on user events are available.
- Metrics can be filtered by date range and device type.
- Metrics are refreshed approximately every 6 hours.

You can view search and recommendation analytics in the Agent Builder in the Google Cloud console. Select your app, and then click **Analytics** in the left pane.

Click each marker to learn more about viewing metrics data and charts.

Google Cloud Search / Analytics

Agent Builder

Analytics

PER SEARCH

PER SEARCH SESSION

COMPARISON

2

1

3

Aggregated Per Search Metrics

Search Count: 1

Click Through Rate (CTR): Ø

No Result Rate: 0.00%

Search Count: 1

Click Through Rate (CTR): 0.00%

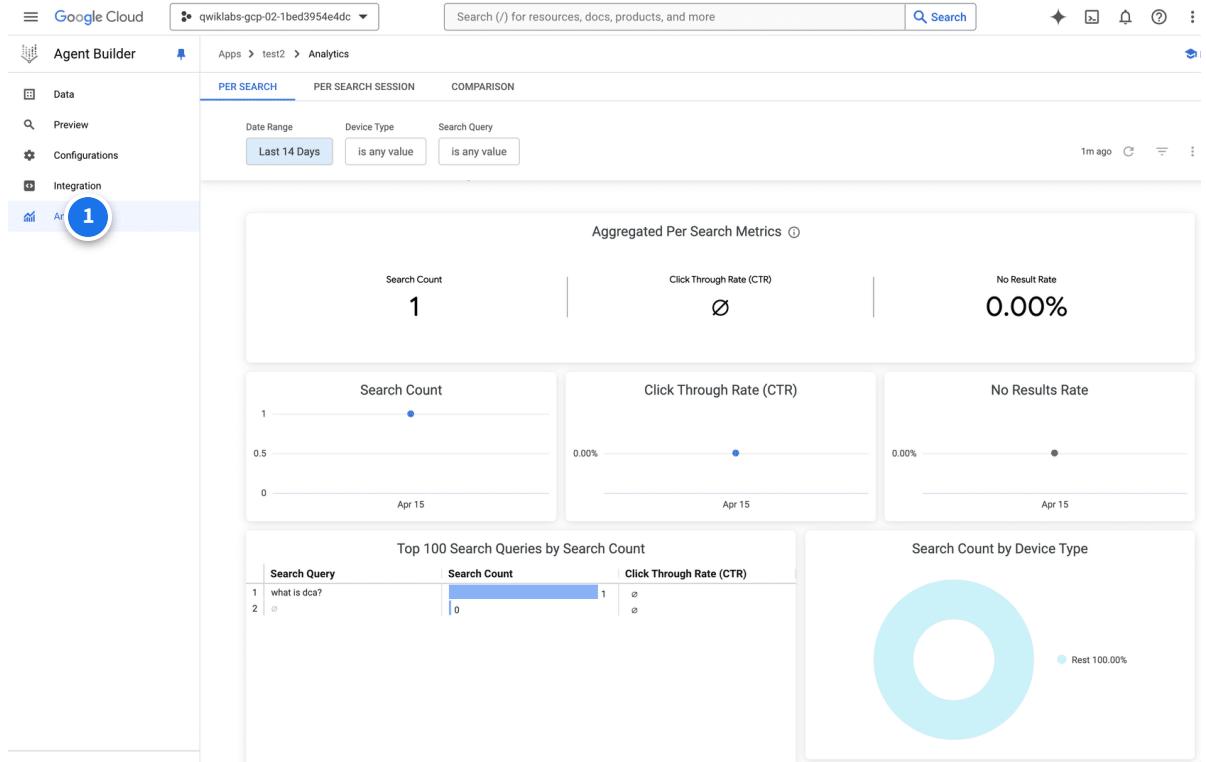
No Results Rate: 0.00%

Top 100 Search Queries by Search Count

Search Query	Search Count	Click Through Rate (CTR)
what is dca?	1	Ø
ø	0	Ø

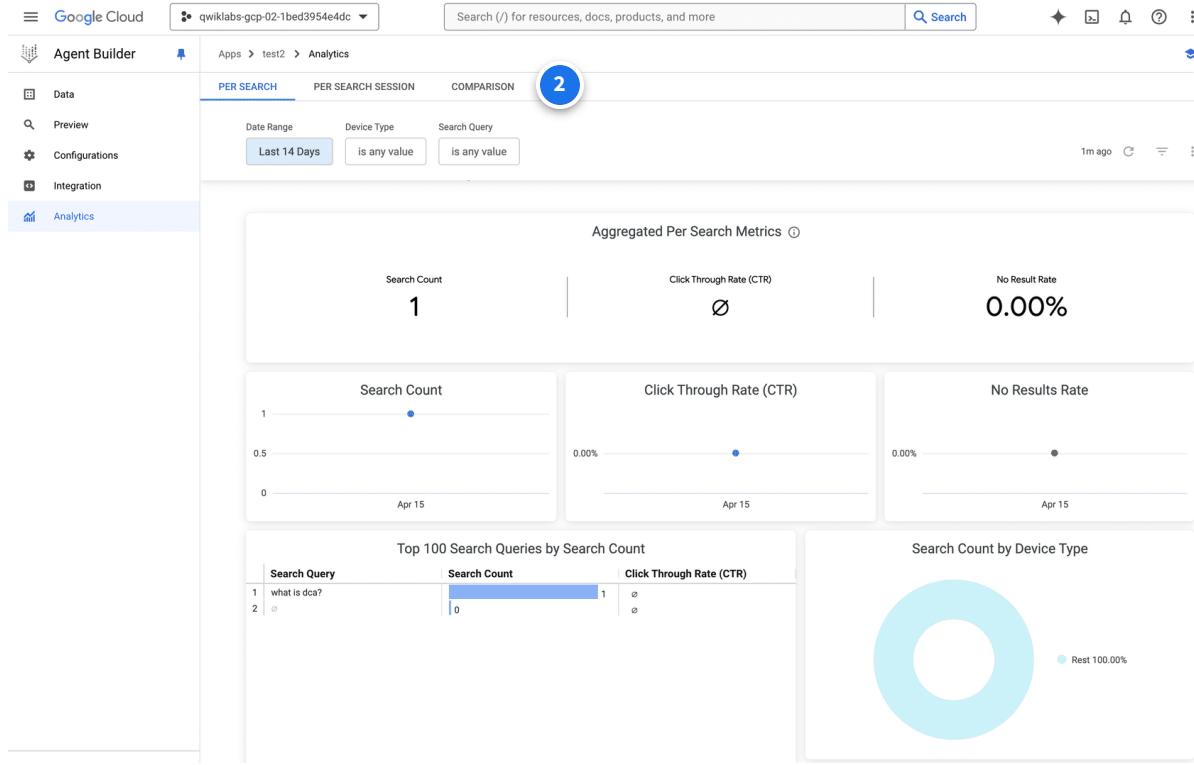
Search Count by Device Type

Rest 100.00%



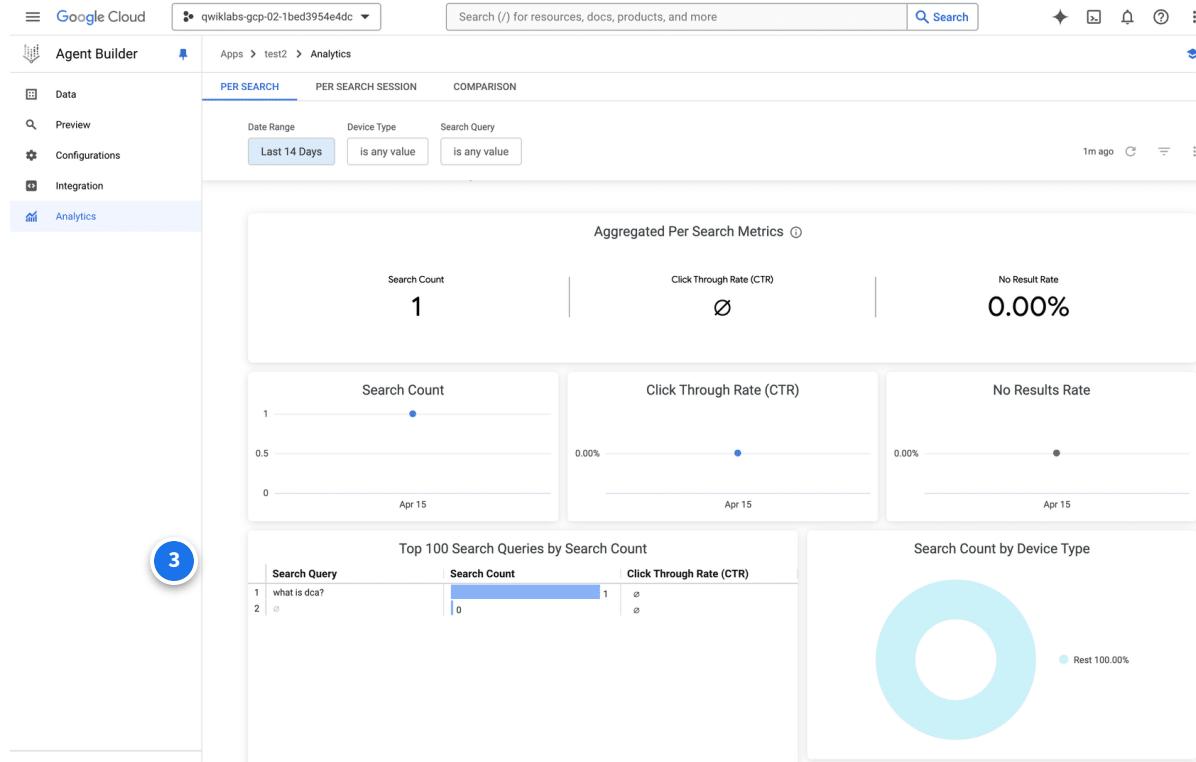
Click Analytics

Opens the search or recommendation analytics page for the selected app.



Select type of search metrics

Select to view metrics per-search, per-search-session, or view the comparison between the two sets of metrics.



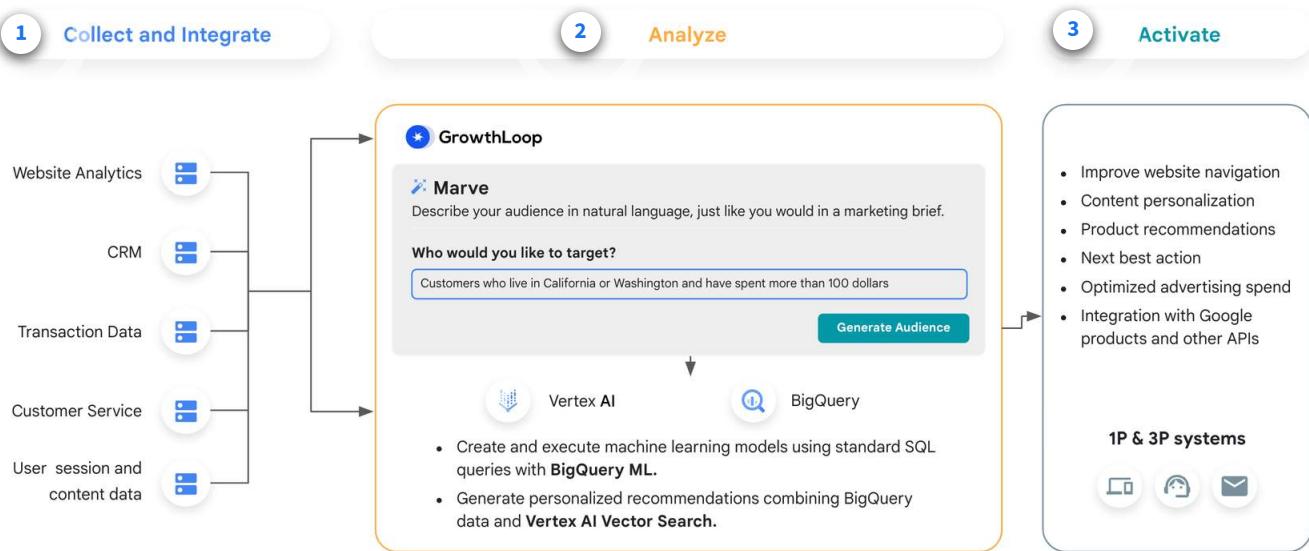
Search query metrics

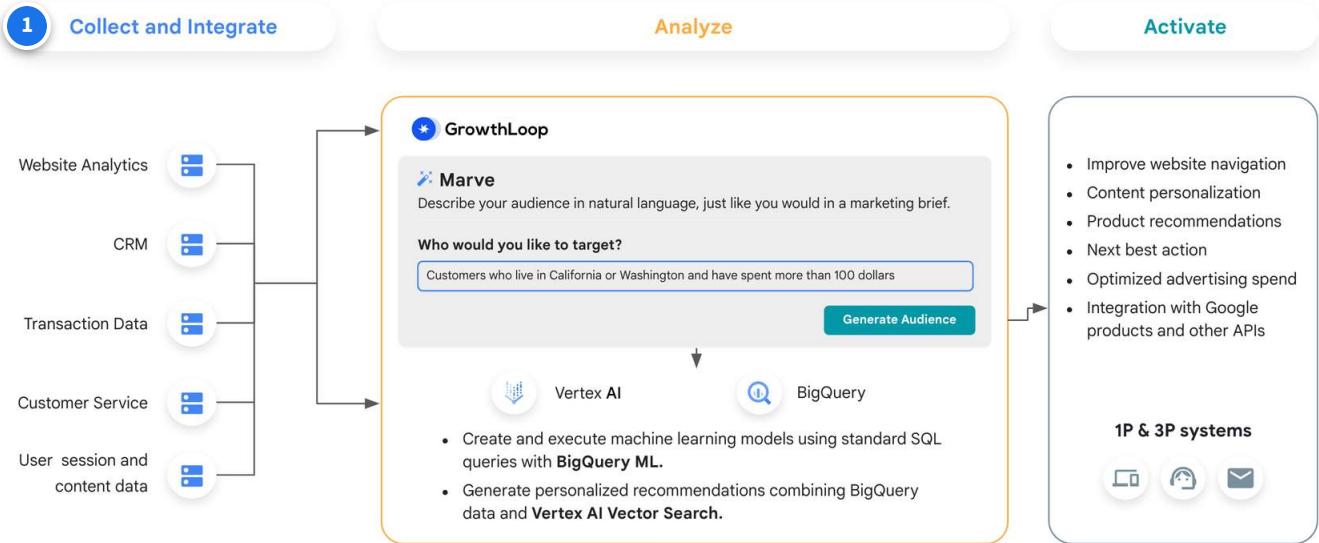
View metrics per search query.

Content 360 BigQuery

Website analytics, CRM, transaction and other data can be ingested into BigQuery and processed with [BQML](#) and other tools (e.g., GrowthLoop) to generate customer segmentation data, and a 360 degree view of your customer.

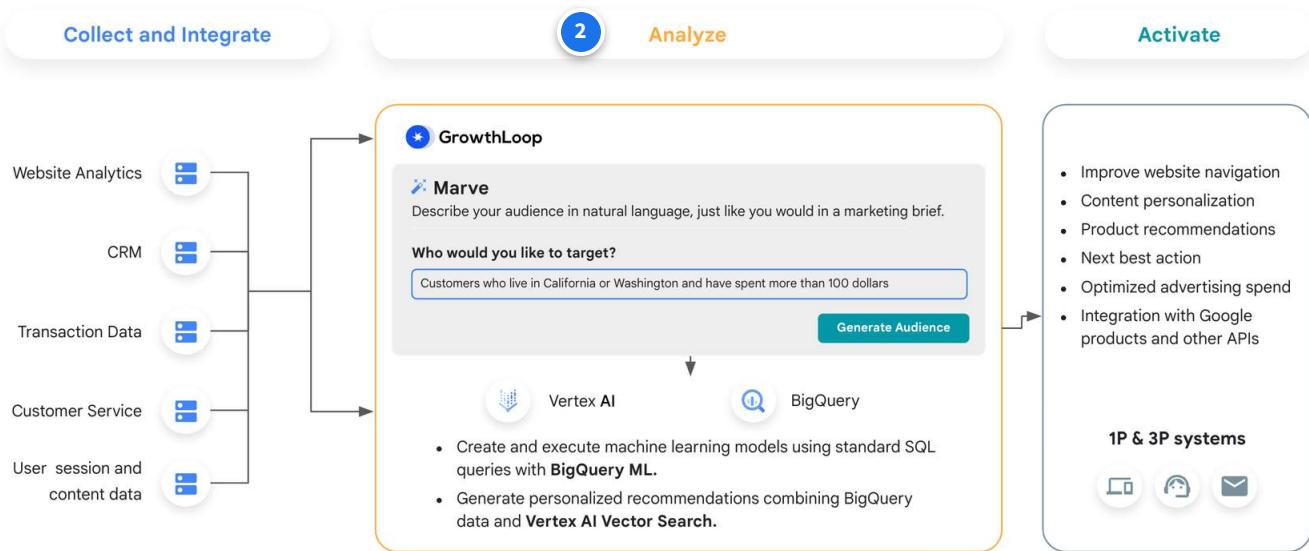
The customer segmentation data can then be used with Gen AI models in Vertex AI such as the Palm 2 APIs, Gemini to generate personalized content.





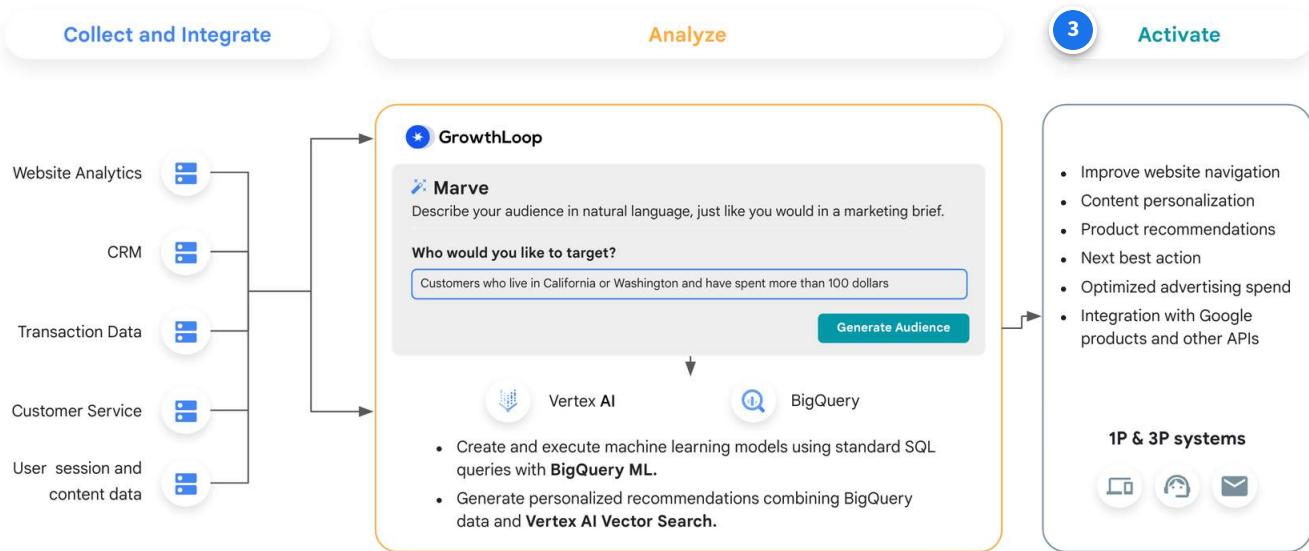
Collect and Integrate

Build a unified customer view from ingesting data across multiple sources.



Analyze

Define dynamic customer segments in natural language using GrowthLoop on BigQuery.



Activate

Activate across websites and other channels.

Translate and localize content

To achieve their content goals, content managers need assistance in the form of suggestions which they can use to create and update their website content. They can also use suggestions to achieve their business goals such as expanding into a new region that requires localization and translation.

With Vertex AI, you can rapidly translate text from one language to another. For text translation, there are three models that you can choose from:

- **Translation LLM** - A fine-tuned model that lets you tailor responses to more closely match your style, tone, and industry domain.
- **Gemini Pro** - An LLM in the Gemini family of models that performs natural language tasks, such as translation, summarization, content generation, etc.

- **Cloud Translation Neural Machine Translation (NMT)** - A Google pre-trained model to translate text programmatically using the Cloud Translation API.



The languages that are supported by each model vary. Check that the model you use supports your source and target languages.

You can use these models to translate text using the Google Cloud console or API. *Click the Start or Next button (>) to learn more.*

Translate text using the Cloud console

Step 2

Access Vertex AI Studio

The screenshot shows the Google Cloud Vertex AI Studio interface. At the top, there's a navigation bar with 'Google Cloud' and a project dropdown 'qwiklabs-gcp-02-1bed3954e4dc'. A search bar says 'Search (/) for resources, docs, products, and more' with a 'Search' button. Below the navigation is a main content area titled 'Create a new prompt' under 'GET STARTED'. It has three sections: 'Generate text' (with 'TEXT PROMPT' and 'CODE PROMPT' buttons), 'Start a conversation' (with 'TEXT CHAT' and 'CODE CHAT' buttons), and 'Translate text' (with a 'TRANSLATE' button). On the left, a sidebar lists 'TOOLS' (Dashboard, Model Garden, Pipelines), 'NOTEBOOKS' (Colab Enterprise, Workbench), and 'VERTEX AI STUDIO' (Overview, Multimodal). The 'Language' tab is highlighted with a blue border and an arrow pointing to it.

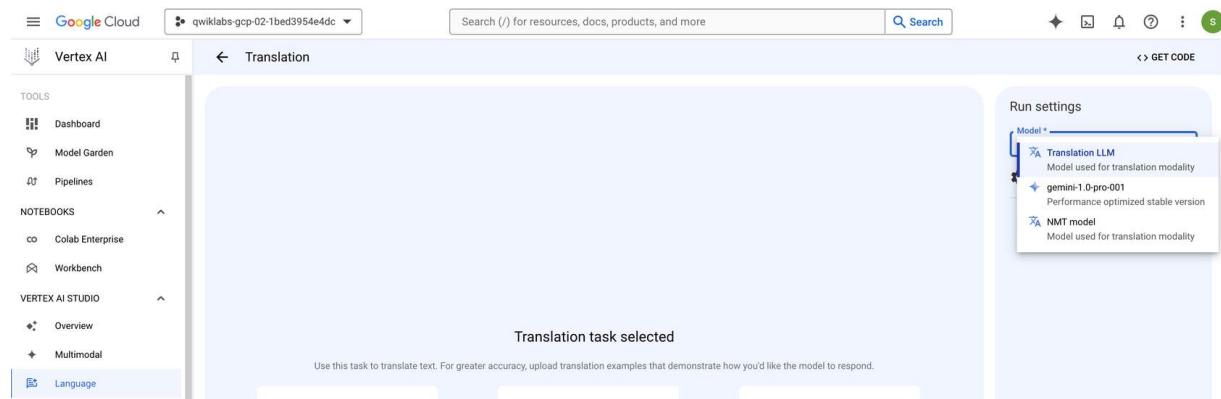
In the Google Cloud console, access Vertex AI Studio.

1. Select **Language**.

2. Click **Translate**.

Step 3

Select Run settings



The screenshot shows the Google Cloud Vertex AI Translation interface. On the left, there's a sidebar with 'Vertex AI' selected. The main area is titled 'Translation' and displays the message 'Translation task selected'. Below it, a note says 'Use this task to translate text. For greater accuracy, upload translation examples that demonstrate how you'd like the model to respond.' On the right, a 'Run settings' panel is open, showing a dropdown menu for 'Model'. The 'Translation LLM' option is selected, with a sub-note: 'Model used for translation modality'. Other options shown are 'gemini-1.0-pro-001' (Performance optimized stable version) and 'NMT model' (Model used for translation modality). A blue bracket highlights the 'Model' dropdown.

1. Choose the translation model.
2. Optionally configure advanced settings based on the selected model.

Step 4

Select language options and text to translate

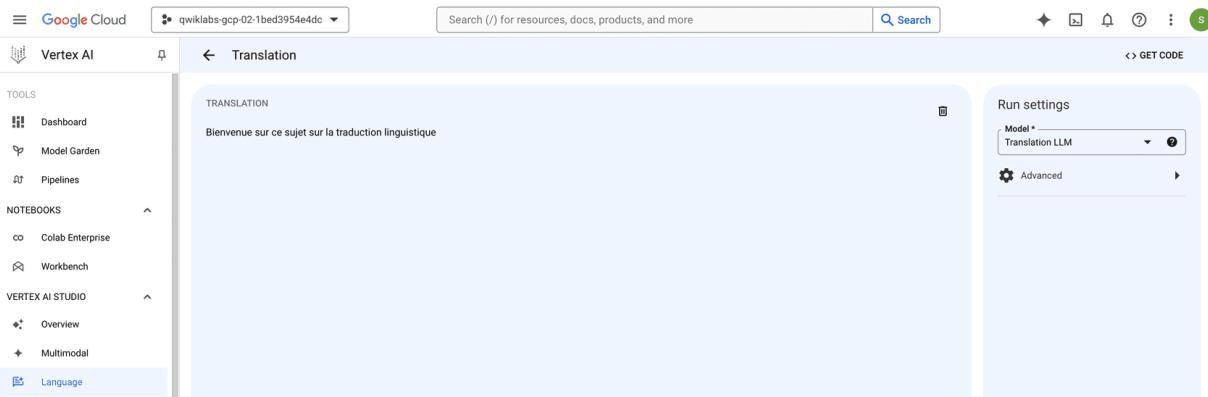
ENGLISH ▾ → FRENCH ▾ | ADD EXAMPLES ▾ ?

Welcome to this topic on language translation

 SUBMIT

1. Select the source and target languages.
2. For the Translation LLM, optionally provide example translations to match your desired style, tone, and industry domain.
3. Type the text to translate.
4. Click **Submit**.

View the translated response



To use the REST API, make a POST request to the `translation.googleapis.com` endpoint with the required request parameters in JSON format. To learn more, view the [documentation](#).

```
POST https://translation.googleapis.com/v3/projects/PROJECT_ID/locations/LOC_ID/translateText
```

Localize content

To create website content for global audiences, you can localize your content using Google Cloud's Gen AI tools in natural language.



- Use [Gemini for Google Workspace](#) to write and refine documents for website copy.

- Use [Imagen on Vertex AI](#) to create and update images using text prompts.

What Did I Walk Away With?

Congratulations on completing this module on website modernization!

In this module, you learned about:

- ✓ Critical touch points across the customer journey and the capabilities of Gen AI to enhance their value.
- ✓ Areas of website transformation with Gen AI, which are: content generation, website navigation, and self service.
- ✓ Tools to analyze and improve content performance.



What's in It for Me?

Website modernization aims to enhance content generation by providing LLM powered tools to content creators. It also aims to enhance website navigation by introducing conversational search experiences that promote the discoverability of various pages within a website. To increase the probability of user engagement, recommendations can be integrated to automatically recommend user preferred web pages on the website.



In this module, you:

- ✓ Use Vertex AI search to enhance the website navigation experience with search results that link to website content.
- ✓ Create, translate, and refine blog post text using Gen AI models.
- ✓ Generate images using the Vertex AI Imagen API with text prompts.
- ✓ Fetch recommendations by creating a recommendations app in Vertex AI.

Vertex AI Search

Vertex AI Search is a fully-managed platform that is powered by large language models, that lets you build AI-enabled search and recommendation experiences for your public or private websites or mobile applications.

Types of Search apps

With Vertex AI Search, you can quickly build a Google-quality search app on your own data and embed a search bar in your website pages or app.

You can create the following different types of search apps:

Click each tab to learn more.

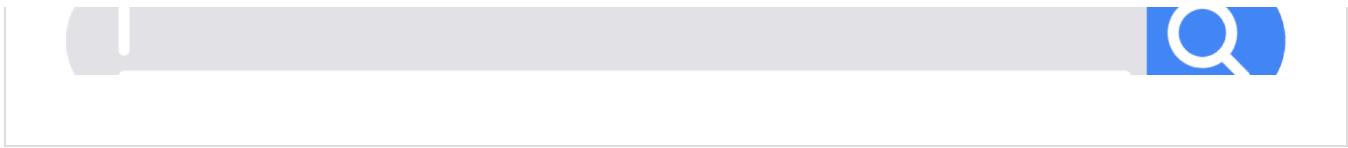
GENERIC SEARCH

MEDIA SEARCH

HEALTHCARE SEARCH

Apply generic search to websites or data stores containing your proprietary data. This enables your users to search for content that you want them to see.

In this course, we focus on adding generic search to websites.



GENERAL SEARCH	MEDIA SEARCH	HEALTHCARE SEARCH
----------------	--------------	-------------------

This type of search capability is specially designed for media content, such as movies, videos, and music. With media search, users can efficiently find the media content that they want to view or listen to.



GENERAL SEARCH	MEDIA SEARCH	HEALTHCARE SEARCH
----------------	--------------	-------------------

A search capability that lets users query healthcare records that are stored in FHIR data stores. You can import FHIR resources that contain clinical data from your Cloud Healthcare API FHIR store. You can also search unstructured data, such as images, PDF files, and RTF files, referenced by the FHIR resources.



Key features of Vertex AI Search

Here are some key features of Vertex AI Search.

Click each button to expand the items and learn more.

Natural language understanding and semantic search

Vertex AI Search provides a high-quality search experience without needing to implement and maintain systems that perform complex NLP techniques, keyword searches, or pattern matching.

Included are capabilities to understand synonyms, correct spellings, and auto-suggest searches.

Generative AI

You can incorporate Gen AI-powered summarization and conversational search for unstructured documents.

Search recommendations

With ML-based content and metadata understanding, users can quickly find content that is similar to the content that they are currently viewing.

Vertex AI Search console and APIs

To set up a search app for your public websites, or for your structured or unstructured data, you can use the Agent Builder in the Google Cloud console or Google's APIs.

To integrate search into your website, you can add an [out-of-the-box search widget to a web page](#) or use the Vertex AI Agent Builder [Discovery Engine API](#).

Implement Vertex AI Search

Set up

Before you can use Vertex AI Search, you must set it up and create a Search app.

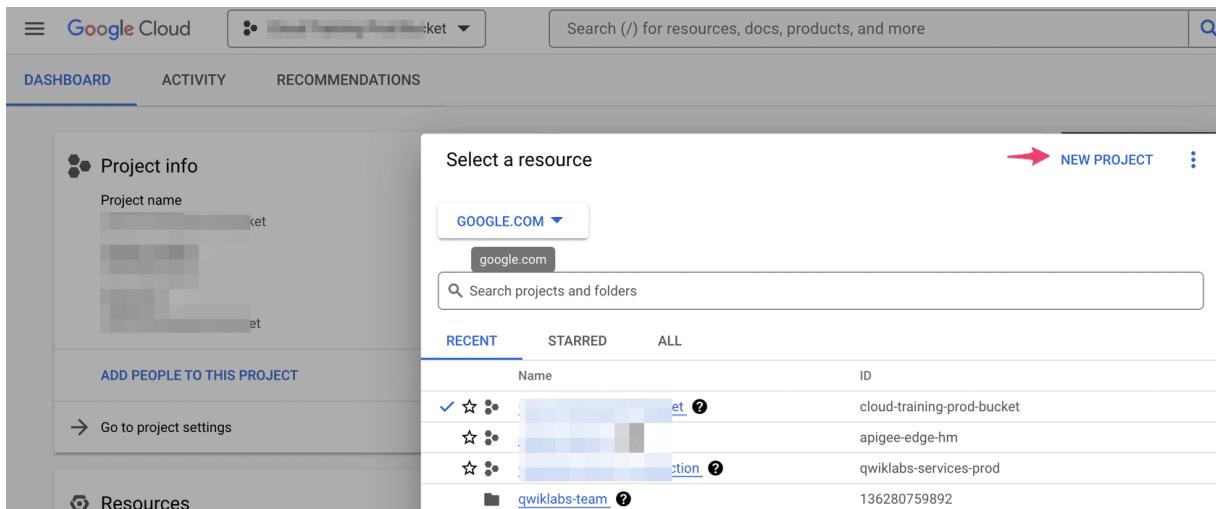
Click the Start or Next button (>) to learn more.

Introduction

To set up Vertex AI Search for your website, follow these steps:

Step 2

Select or create a Google Cloud project



The screenshot shows the Google Cloud Console interface. On the left, there's a sidebar with 'Project info' (redacted), 'ADD PEOPLE TO THIS PROJECT', and 'Resources'. The main area has tabs for 'DASHBOARD', 'ACTIVITY', and 'RECOMMENDATIONS'. A modal window titled 'Select a resource' is open. It shows a dropdown menu for 'GOOGLE.COM' with 'google.com' selected. Below it is a search bar with 'Search projects and folders'. There are three tabs: 'RECENT' (selected), 'STARRED', and 'ALL'. A table lists projects: 'cloud-training-prod-bucket' (selected with a checkmark), 'apigee-edge-hm', and 'qwiklabs-services-prod'. At the bottom right of the modal is a red arrow pointing to 'NEW PROJECT'.

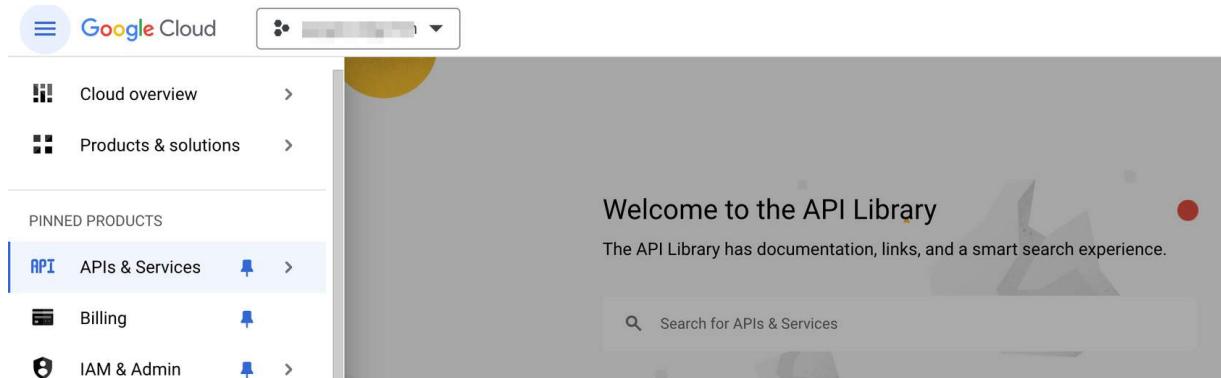
Name	ID
cloud-training-prod-bucket	cloud-training-prod-bucket
apigee-edge-hm	apigee-edge-hm
qwiklabs-services-prod	qwiklabs-services-prod
qwiklabs-team	136280759892

You can do this from the Google Cloud console. Ensure billing is enabled for the project.

Note: For the lab in this course, a Google Cloud project with billing enabled is automatically created.

Step 3

Enable relevant APIs



Enable the Vertex AI platform, Discovery Engine, BigQuery, Cloud Storage APIs.

You can search for and enable APIs from the Cloud console, or use the gcloud command line interface.

With the gcloud CLI, you can run the command:

```
gcloud services enable \
```

```
aiplatform.googleapis.com \
```

```
discoveryengine.googleapis.com \
```

```
bigquery.googleapis.com \
```

```
storage.googleapis.com
```

Step 4

Activate Vertex AI Agent Builder

The Vertex AI Agent Builder service includes the Vertex AI Search platform.

Activate the service from the Agent Builder page in the Cloud console.

- Read and optionally agree to the terms, then click **Continue and activate the API**.

Step 5

Configure access control

You can configure access control for Vertex AI Agent Builder at the project level.

To grant access to Vertex AI Agent Builder using the Google Cloud console:

1. Select a project on the IAM page in the console.
2. Select a principal to grant a role to.
3. Grant the **Discovery Engine Admin** role to the principal.

As a project owner, you automatically have this role for the project.

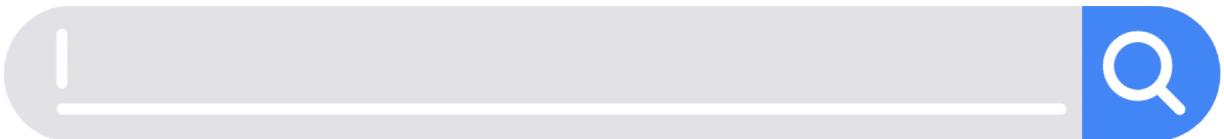
Summary

After completing the setup, you can now create a search app as described in the next section.

Create a Search app

When using Vertex AI Search, you create a Search app and connect it to a data store. A Google Cloud project can contain multiple apps.

Steps to create a Search app



Step 2

Prepare your data

Determine the type of data you'll make available in your search app and prepare it for importing to Vertex AI Search.

Your data store can be based on the following types of data:

- Data from website URLs
- Unstructured data
 - PDF, HTML, TXT documents that are stored in Cloud Storage, BigQuery, and Google Drive.
- Structured data
 - Data that has a specific schema such as data in a BigQuery table, JSON files in Cloud Storage, or from third-party connectors.
- FHIR data from Cloud Healthcare API.

Data preparation involves:

1. [Ingesting](#) and preparing your data based on the type of data.
2. Optionally [setting up access control](#) to limit the data returned in the search app's results.

For more details, view the documentation at the links provided.

Step 3

Create an app for generic search of website data

The screenshot shows the Google Cloud Agent Builder interface. At the top, there's a navigation bar with the Google Cloud logo and a dropdown menu showing the project name "qwiklabs-gcp-02-1bed3954e4dc". Below the navigation bar, there are two main sections: "Agent Builder" on the left and "Apps" on the right. The "Agent Builder" section has icons for "Data Stores", "Monitoring", and "Settings". The "Apps" section has a "NEW APP" button with a red arrow pointing to it. On the right, under "Apps", there's a table with columns "Name" and "App type". It lists two entries: "test2" (Search) and "testr" (Recommendations). There's also a "Filter" button.

Name	App type
test2	Search
testr	Recommendations

1. In the cloud console, from the Apps page in Agent Builder, click New App.

Vertex AI Agent Builder is an expansion and rebranding of Vertex AI Search and Conversation. With Agent Builder, you can create AI agents using natural language or code.

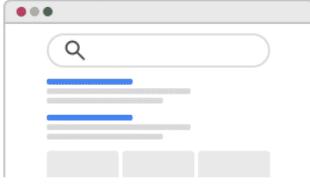
Step 4

Select the type of app

[← Create App](#)

1 Type
2 Configuration
3 Data

Select app type
Select the type of application you want to create



Search

Get quality results out-of-box and easily customize the engine

[SELECT](#)

1. Select the *Search* app type.

With a search app, you can quickly build Google-quality search on your own data, and embed a search bar on your website or in your application.

Step 5

Configure the app

The screenshot shows the 'Create App' configuration interface. The top navigation bar includes a back arrow, the text 'Create App', and a 'LEARN' button. The left sidebar has three tabs: 'Type' (marked with a checkmark), 'Configuration' (selected and highlighted in blue), and 'Data'. The main content area is titled 'Search app configuration' with the sub-instruction 'Configure your app settings'. Under the 'Content' section, 'Generic' is selected (indicated by a blue circle and a red arrow). Other options include 'Media' (with a 'PREVIEW' link) and 'Healthcare'. Below these are two expandable sections: 'Enterprise edition features' (which includes extractive answers, image search, and website search, with a note about turning it on) and 'Advanced LLM features' (which includes search summarization and search with follow-ups).

To configure the app:

1. Select the type of content used in the search: Generic, Media, or Healthcare.
2. Enable enterprise edition features for extracting answers from documents, image search, and website search.
3. Enable advanced LLM features for search summarization and search with follow-ups.
4. Provide a name for your app, external company name, and location of your app. Location can be global, or multi-regional (US, EU).

Step 6

Create a data store for the app

The screenshot shows a 'Create App' interface. On the left, there's a sidebar with three steps: 'Type' (checked), 'Configuration' (checked), and '3 Data' (selected). The main area is titled 'Data Stores' and features a 'CREATE DATA STORE' button with a plus sign. Below it is a search bar labeled 'Filter' with the placeholder 'Enter property name or value'. A table lists existing data stores: 'test_wed_ds' (connected to 'test2') and 'testds' (N/A). A red arrow points from the text above to the 'CREATE DATA STORE' button.

	Name ↑	Connected apps
<input type="checkbox"/>	test_wed_ds	test2
<input type="checkbox"/>	testds	N/A

To create a data store:

1. Click Create Data Store.
2. Select a data source. Various data sources such as BigQuery, Cloud Storage, Website URLs, and others are supported.
3. Configure the data source based on the type of data source selected. For example, for a Cloud Storage data source, the path to a folder or file in a Cloud Storage bucket is required.
4. Provide a name for your data store.
5. After creating the data store, you can select it from the list of data stores, and attach it to your app. Documents will be automatically imported when the app is created.

Summary

The screenshot shows the Google Cloud Platform interface with the 'Agent Builder' preview section open. In the search bar, the query 'what is DCA?' is entered. Below the search bar, there is a button labeled 'Ask A Follow Up'. A note indicates that 'Generative AI is experimental'. The results section shows one result: '[1] https://storage.cloud.google.com/test_website_search_blog/...'. This result is marked with a blue '5' icon, indicating five documents. A brief description follows: 'While the allure of high returns is tempting, the fear of market volatility can be paralyzing. This is where dollar-cost averaging (DCA) comes in, a strategy that smooths out the ride and mitigates the risks associated with investing.'

You can preview the app's search functionality from the Agent Builder > Preview section in the Cloud console. Type a search query, and the app returns search results with links to the documents from your data store.

Configure and integrate search

Vertex AI Search provides many configuration options, some of which depend on whether you plan to deploy a search widget on your website, or integrate search API calls in your web application.

To learn more, click each button to expand the item.

Embed an out-of-the-box search widget

You can embed a search widget into your website that automatically provides a search bar and expandable search interface. To use the search widget, you configure:

- Search widget results.
- Search widget facets - [Facets](#) can be shown next to results in the search widget to help users filter the results. You can configure facets in the configurations page in the Google Cloud console.

Use the search API

To integrate search API calls into your server or application, configure these search settings:

- Field settings
- Autocomplete
- Serving controls
- Search tuning
- Custom embeddings

Here are some of the search result configuration options that you can specify when configuring your search app.

Click each marker to learn more.

General configurations

Preview

1

Search type

Select the type of search experience the widget provides.

- Search
- Search with a list of results
- Search with an answer**
- A generative summary above the search results
- Search with follow-ups
- Conversational search with generative summaries and support for follow-up questions

2

Large Language Models for summarization

Try out different models to see which one works best for you

- Stable Default model. [Learn more about the current default model](#)
- Gemini 2.0 Flash 1 **New**
The Vertex AI [gemini-2.0-flash-001 model](#) with additional training for Q&A task
- Gemini 1.5 Flash 2
The Vertex AI [gemini-1.5-flash-002 model](#) with additional training for Q&A task
- Gemini 1.5 Flash 1 V2
The Vertex AI [gemini-1.5-flash-001 model](#) with additional training for Q&A task (version 2)
- Gemini 1.5 Pro **Preview**
The Vertex AI 1M token context window model. [Learn more about Gemini 1.5 Pro](#)

3

Customize the summary

Give instructions to customize the tone, style, and verbosity of the generative summary 

General configurations

1

Search type

Select the type of search experience the widget provides.

Summary result count

Number of top results used to generate the search result summary

Search

Search with a list of results

Search with an answer

A generative summary above the search results

Search with follow-ups

Conversational search with generative summaries and support for follow-up questions

Large Language Models for summarization

Try out different models to see which one works best for you

Stable
Default model. [Learn more about the current default model](#)

Gemini 2.0 Flash 1 **New**
The Vertex AI [gemini-2.0-flash-001 model](#) with additional training for Q&A task

Gemini 1.5 Flash 2
The Vertex AI [gemini-1.5-flash-002 model](#) with additional training for Q&A task

Gemini 1.5 Flash 1 V2
The Vertex AI [gemini-1.5-flash-001 model](#) with additional training for Q&A task (version 2)

Gemini 1.5 Pro **Preview**
The Vertex AI 1M token context window model. [Learn more about Gemini 1.5 Pro](#)

Customize the summary

Give instructions to customize the tone, style, and verbosity of the generative summary

Preview

Search type

Configure the search results experience for the user. You can choose between:

- Search with a list of results.
- Search with an answer - provides an answer that is synthesized from the top results of website or unstructured data.
- [Search with follow-ups](#) - allows for follow-up questions that keep the context of the initial search query on the website and unstructured data.

General configurations

Preview

Search type

Select the type of search experience the widget provides.

Summary result count

Number of top results used to generate the search result summary

- Search
- Search with a list of results
- Search with an answer**
- A generative summary above the search results
- Search with follow-ups
- Conversational search with generative summaries and support for follow-up questions

Large Language Models for summarization

Try out different models to see which one works best for you

2

- Stable
Default model. [Learn more about the current default model](#)
- Gemini 2.0 Flash 1 **New**
The Vertex AI [gemini-2.0-flash-001 model](#) with additional training for Q&A task
- Gemini 1.5 Flash 2
The Vertex AI [gemini-1.5-flash-002 model](#) with additional training for Q&A task
- Gemini 1.5 Flash 1 V2
The Vertex AI [gemini-1.5-flash-001 model](#) with additional training for Q&A task (version 2)
- Gemini 1.5 Pro **Preview**
The Vertex AI 1M token context window model. [Learn more about Gemini 1.5 Pro](#)

Customize the summary

Give instructions to customize the tone, style, and verbosity of the generative summary



LLM

Select the large language model to use for search results.

General configurations

Search type

Select the type of search experience the widget provides.

Search with an answer

A generative summary above the search results

Summary result count

Number of top results used to generate the search result summary

Large Language Models for summarization

Try out different models to see which one works the best for you

- Stable Default model. [Learn more about the current default model](#)
- Gemini 2.0 Flash 1 **New** The Vertex AI [gemini-2.0-flash-001 model](#) with additional training for Q&A task
- Gemini 1.5 Flash 2 The Vertex AI [gemini-1.5-flash-002 model](#) with additional training for Q&A task
- Gemini 1.5 Flash 1 V2 The Vertex AI [gemini-1.5-flash-001 model](#) with additional training for Q&A task (version 2)
- Gemini 1.5 Pro **Preview** The Vertex AI 1M token context window model. [Learn more about Gemini 1.5 Pro](#)

Customize the summary

Give instructions to customize the tone, style, and verbosity of the generative summary

Summary customization

Provide instructions to customize the tone, style, and verbosity of the generative search summary.

You can also configure options for:

- **Autocomplete:** Suggests search queries based on the first letters that users enter into the search bar.
- **Feedback:** Provides thumb_up and thumb_down buttons so that users can rate the quality of the search results.
- **Facets:** If the data is structured or contains metadata, you can configure which metadata fields to include in the search results.
- **Snippets:** A snippet is a short section of text, typically a sentence, under the document title in the search results. By default, a snippet is

displayed for each search result for website and unstructured data.

Instead of a snippet, you can configure an extractive answer which is a longer passage of text from the search result content.

Integrate Search in your website

With the Search widget

After you configure your Search widget, you can add it to your website with these steps.

Click the Start or Next button (>) to learn more.

Step 2

Set up authorization

The screenshot shows the Google Cloud Agent Builder interface. At the top, there's a blue header bar with the text "Step 2". Below it, the main title is "Set up authorization". The navigation bar on the left includes "Agent Builder", "Data", "Preview", "Configurations", "Integration" (which is highlighted in blue), and "Analytics". The main content area has a breadcrumb trail: "Apps > test > Integration". It's divided into two tabs: "WIDGET" (which is active) and "API". The "WIDGET" tab contains a section titled "Select authorization type" with the sub-instruction "Choose a widget authorization type:". There are two options: "JWT or OAuth Based" (selected, indicated by a blue radio button) and "Public Access". Below each option is a brief description. Under "JWT or OAuth Based", it says: "The documents in the data store are secured by a JWT or an OAuth token that you provide through your codebase." Under "Public Access", it says: "The widget won't restrict who can get results from a search query." Below this, there's a section titled "Add allowed domains for the widget" with the instruction "Enter your domain below to register it along with its subdomains. For example, registering 'example.com' includes 'subdomain.example.com'. Enter a valid host name, excluding path, port, query, or fragment. Changes may take up to 30 minutes to apply.". A "Domain" input field is followed by an "ADD" button. Below this is a table with a single row labeled "Name" and "No rows to display". At the bottom of the page is a "SAVE" button.

For non-public access to search results, your application must be able to generate a JWT or OAuth token for use by the Search widget.

The auth token is used to make an API call on behalf of the user or service account. The auth token must have the OAuth scope: <https://www.googleapis.com/auth/cloud-platform>.

To configure the widget:

1. Select the app in Agent Builder in the Google Cloud console.
2. In the Integration page, in the Widget tab, configure:
 - a. Authorization type (JWT/OAuth or Public)
 - b. Add the domain name for the pages where the widget will appear.

Step 3

Copy code to your web application

Copy the following code to your web application

Copy the following snippet into your web page to add a "Search here" link. Users click "Search here" to open the widget. By default, the reCAPTCHA badge is displayed. To hide the reCAPTCHA badge, [see reCAPTCHA documentation.](#)

If you want a different language for the widget UI, edit the hl parameter from the script URL. See [Languages](#).

```
<!-- Widget JavaScript bundle -->
<script src="https://cloud.google.com/ai/gen-app-builder/client?hl=en_US"></script>

<!-- Search widget element is not visible by default -->
<gen-search-widget
  configId="1a2f0cf0-f761-4789-bf7d-e54de8b57a39"
  triggerId="searchWidgetTrigger">
</gen-search-widget>

<!-- Element that opens the widget on click. It does not have to be an input -->
<input placeholder="Search here" id="searchWidgetTrigger" />
```

In your UI codebase, generate an auth token (JWT or OAuth) and pass it to the widget. [Learn more.](#)

```
// Set authorization token.
const searchWidget = document.querySelector('gen-search-widget');
searchWidget.authToken = "<JWT or OAuth token provided by your backend>";
```

The Agent Builder page displays a code snippet.

1. Copy the code snippet into your web page to add a "Search here" link. To open the widget, users click "Search here".
2. In your UI codebase, generate an auth token (JWT or OAuth) and pass it to the widget.
3. Periodically set a fresh token by repeating the previous step before the current token expires.

Summary

For more details on adding the Search widget to your website, view the [documentation](#).

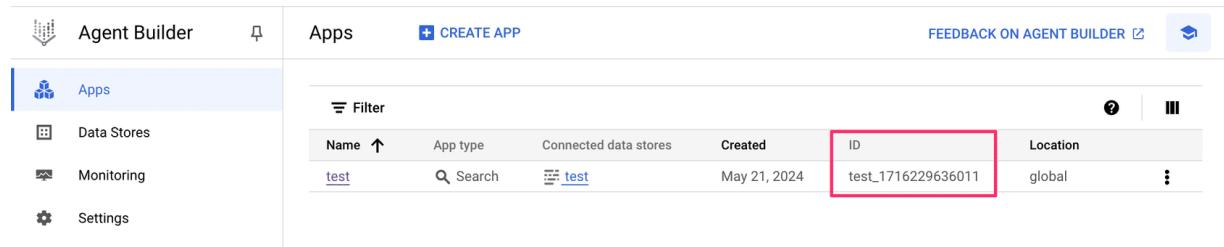
With the Search API

Instead of creating a Search widget to add to your web page, you can make API calls and integrate those calls into your server or application.

Click the Start or Next button (>) to learn more.

Step 2

Find your app ID



The screenshot shows the Google Cloud Agent Builder interface. On the left, there's a sidebar with icons for Agent Builder, Apps (which is selected), Data Stores, Monitoring, and Settings. The main area is titled 'Apps' and has a 'CREATE APP' button. A 'Filter' section allows filtering by Name (set to 'test'), App type (set to 'Search'), Connected data stores (set to 'test'), Created (set to 'May 21, 2024'), and Location (set to 'global'). The table lists one app: 'test' (ID: test_1716229636011). The 'ID' column is highlighted with a red box.

Name	App type	Connected data stores	Created	ID	Location
test	Search	test	May 21, 2024	test_1716229636011	global

1. In the Google Cloud console, in Agent Builder, navigate to the apps page.
2. On the Apps page, find the name of your app, and get the app's ID from the ID column.

Step 3

Invoke the API from your application code

Using the API, you can get search results for an app with website data, or for an app with structured or unstructured data.

Here is a sample REST API call to fetch search results for an app with structured or unstructured data:

```
curl -X POST -H "Authorization: Bearer $(gcloud auth print-access-token)" \
-H "Content-Type: application/json" \
"https://discoveryengine.googleapis.com/v1/projects/PROJECT_ID/locations/global/collections/default_collection/engines/APP_ID/servingConfigs/default_search:search" \
-d '{
  "query": "QUERY",
  "userPseudoid": "USER_PSEUDO_ID",
  "pageSize": "PAGE_SIZE",
  "offset": "OFFSET",
  "orderBy": "ORDER_BY",
  "filter": "FILTER",
  "boostSpec": "BOOST_SPEC",
  "facetSpec": "FACET_SPEC",
  "queryExpansionSpec": "QUERY_EXPANSION_SPEC",
  "spellCorrectionSpec": "SPELL_CORRECTION_SPEC",
  "contentSearchSpec": "CONTENT_SEARCH_SPEC",
  "dataStoreSpec": {"DATA_STORE_SPEC"},
}'
```

View the [documentation](#) for more details.

Summary

For more details on using the API to fetch search results, view the [documentation](#).

Apps and data stores

The relationship between apps and data stores depends on the type of app.

Click each flashcard to learn more.

Generic search app

Generic search apps have a many-to-many relationship with data stores.

Media app

A media app has a many-to-one relationship with its data store.

Healthcare search app

A healthcare search app has a many-to-one relationship with its data store.

Some other items to note:

- A generic recommendations app has a one-to-one relationship with its data store.

- A media app can only connect to one data store, while a given data store can be connected to several media apps. For example, a media search app and a media recommendations app can share a data store.
- A healthcare search app can only connect to one data store, whereas a given data store can be connected to several apps. For example, a patient-facing app and a provider-facing app can connect to the same data store.
- After a data store is connected to an app, it can't be disconnected.

Order of creation

The order in which you create a data store and an app depends on the type of app.

App type	Create a data store along with the app	Create a data store separately	Connect a data store when the app is created
Generic search and recommendations	YES	YES	YES
Media search and recommendations	YES	NO	NO
Healthcare search	YES	YES	YES

Data stores

A data store provides the data for your search or recommendation app. Let's review some of the concepts on data stores.

A data store:

- Has one or more data records, called documents.
- Can contain only one type of data or document.

Depending on the type of data in the data store, a document represents a web page, structured data like a table row or JSON that follows a schema.

A document can also be an entity specific to a third-party data source, unstructured data, like an HTML, PDF, or TXT file, or a supported FHIR data resource for healthcare data.

Click each tab to learn more.

WEB PAGE	STRUCTURED DATA	UNSTRUCTURED DATA	HEALTHCARE FHIR DATA
-----------------	------------------------	--------------------------	-----------------------------



Website URLs
Automatically crawl website content from a list of domains you define.

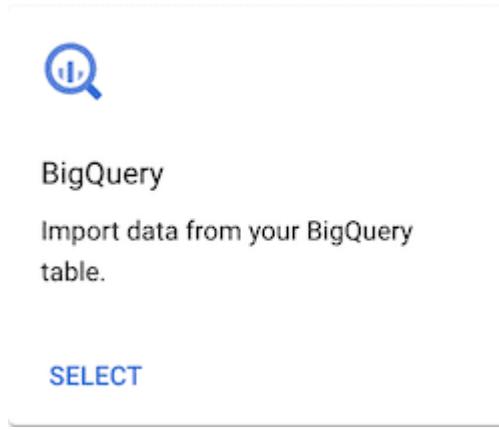
SELECT

WEB PAGE	STRUCTURED DATA	UNSTRUCTURED DATA	HEALTHCARE FHIR DATA
-----------------	------------------------	--------------------------	-----------------------------

- A document is a row in a table or a JSON record that follows a particular schema. Data can be imported from BigQuery, Cloud Storage, local JSON

files, or from third party sources.

- For media data stores, a document contains information that describes the media item, such as the title, URI to the content location, description, category, language, year, and rating.
- Media items are videos, news articles, music, or podcasts.



WEB PAGE	STRUCTURED DATA	UNSTRUCTURED DATA	HEALTHCARE FHIR DATA
----------	-----------------	-------------------	----------------------

- A document is a file in HTML, PDF with embedded text, or TXT format. Additional formats will also be supported in the future.
- With unstructured data, search results are in the form of URLs and summarized answers for natural language queries.
- Documents must be uploaded to a Cloud Storage bucket with appropriate access permissions.



Cloud Storage

Import data from your storage bucket.

[SELECT](#)

WEB PAGE

STRUCTURED DATA

UNSTRUCTURED
DATA

HEALTHCARE FHIR
DATA

- A document is a supported FHIR R4 resource.
- Data is imported from a Cloud Healthcare API FHIR store.
- A healthcare [FHIR](#) data store must satisfy some requirements before it can be used as a data source for Vertex AI Search data store. Please read the [documentation](#) for more information.



Healthcare API (FHIR)

Import FHIR store data from your Cloud Healthcare API dataset. This allows you to create an app on your clinical data.

[SELECT](#)



For more information about apps and data stores, please read the [documentation](#).

Enhance Website Navigation with Vertex AI

In addition to building a Google-quality search app on your own data for your website with Vertex AI, you can quickly build a state-of-the-art recommendation app on your own data that can suggest content similar to the content that the user is currently viewing.

With search and recommendations, you can effectively enhance your user's navigation experience on your website.

Recommendation apps

In Vertex AI Agent Builder, you can create these types of recommendation apps for your website or application:

Click each button to expand the item and learn more.

Generic recommendation apps

Generic recommendation apps can use three different types of data:

- Unstructured data in the form of PDFs ingested from a Cloud Storage bucket.
- Structured data in the form of NDJSON ingested from a Cloud Storage bucket.

- Website data from URLs that you provide.

Media recommendation apps

You can quickly build media recommendations apps that enable users to discover more personalized content, like what to watch or read next, with Google-quality results that are customized by optimization objectives.

Create a generic recommendations app

Introduction

Let's review the process to create a generic recommendations app.

Click the Start or Next button (>) to learn more.

Step 2

Prerequisites

Before creating a recommendations app, make sure to:

1. Create a new or use an existing Google Cloud project with billing enabled.
2. Enable the Vertex AI Agent Builder API.
3. Enable additional APIs as needed, for example, the Cloud Storage API to use data from Cloud Storage for the app.

Step 3

Activate Vertex AI Agent Builder



In the Google Cloud console, go to the Agent Builder page. Read and agree to the Terms of Service, then click Continue and activate the API.

Step 4

Create the app

The screenshot shows the 'Agent Builder' interface with the 'Create App' wizard open. On the left, there's a sidebar with 'Agent Builder' at the top, followed by 'Apps' (which is selected), 'Data Stores', 'Monitoring', and 'Settings'. The main area has a title 'Create App' with a 'Type' step highlighted. Below it, there's a section titled 'Select app type' with the sub-instruction 'Select the type of application you want to create'. Four options are listed in a grid:

- Search**: An icon of a search bar. Description: 'Get quality results out-of-the-box and easily customize the engine'. 'SELECT' button.
- Chat**: An icon of a messaging interface. Description: 'Answer complex questions out-of-the-box'. 'SELECT' button.
- Recommendations**: An icon of a web browser displaying a grid of items. Description: 'Create a content recommendation engine'. A red box highlights the 'SELECT' button.
- Agent**: An icon of two windows with a plus sign. Description: 'Built using natural language, agents can answer questions from data, connect with business systems through tools, and more'. 'PREVIEW' button and 'SELECT' button.

As mentioned earlier, you can use unstructured, structured, or website data for recommendation apps.

The steps outlined here can be used to create and deploy a recommendations app for unstructured data. To use other types of data, refer to the [documentation](#).

1. On the Create App page in Agent Builder, select **Recommendations** as the type of app.
2. On the app configuration page (not shown), provide a name for the app, and leave the **Generic** option as the default. This setting recommends similar content in websites, documents, and any other structured content.

Step 5

Create a data store

The screenshot shows the 'Create a Data Store' interface. The left sidebar has three tabs: 'Source' (selected), 'Data', and 'Configuration'. The main area is titled 'Select a data source' with the sub-instruction 'Choose a data source for your data store'. A search bar is present. Below is a section titled 'Native sources' containing eight items:

- Website URLs**: Automatically crawl website content from a list of domains you define. Includes a 'SELECT' button.
- BigQuery**: Import data from your BigQuery table. Includes a 'SELECT' button.
- Cloud Storage**: Import data from your storage bucket. Includes a 'SELECT' button.
- API**: Import data manually by calling the API. Includes a 'SEE DOCUMENTATION' link.
- Cloud SQL** (PREVIEW): Import data from your Cloud SQL table. Includes a 'SELECT' button.
- Spanner** (PREVIEW): Import data from your Spanner table. Includes a 'SELECT' button.
- Bigtable** (PREVIEW): Import data from your Bigtable table. Includes a 'SEE DOCUMENTATION' link.
- Firestore** (PREVIEW): Import data from your Firestore collection. Includes a 'SELECT' button.

1. On the Apps > Data page, click **Create Data Store**.
2. Select a data source, for example, Cloud Storage.
3. To import data, select the folder or file from a Cloud Storage bucket.

Step 6

Set the data store for the app

The screenshot shows the Agent Builder interface with the following details:

- Header:** Agent Builder, Apps > test-rec > Data, FEEDBACK ON AGENT BUILD.
- Left sidebar:** Data (selected), Preview, Integration.
- Central panel:** **test-rec-ds**
 - Data store ID: test-rec-ds_1716355575978
 - Type: Unstructured data
 - Region: global
 - Number of documents: 176
 - Last document import: May 22, 2024, 10:56:56 AM
 - [VIEW DETAILS](#)
- Bottom tabs:** DOCUMENTS (selected), ACTIVITY, PROCESSING CONFIG, PREVIEW.
- Buttons:** + IMPORT DATA, PURGE DATA.
- Table:** A list of imported documents with columns: ID, URI, and Actions.

ID	URI	Actions
00d3f9569bb04d15f44ad6636535b787	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/2022_Q2_Earnings_Transcript.pdf	[Actions]
02226f706939911fc0b2cc363c205ef9	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/2021_Q3_Earnings_Transcript.pdf	[Actions]
0371b29bfa18ac43896b86a7b63d00b0	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/20190429_alphabet_10Q.pdf	[Actions]
0712c60b400e36013a3cf4037bd12332	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/2019Q2_alphabet_earnings_release.pdf	[Actions]
07c88bfd1ca7666fc300e8fce173b966	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/2011Q2_earnings_google.pdf	[Actions]
0a2ece8ec8f2d2bbe90a8d3b2664331e	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/2018Q1_alphabet_earnings_release.pdf	[Actions]
0a7cf43c9c937036128c5e50539b6439	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/20201030_alphabet_10Q.pdf	[Actions]
0c74e2df712bc3191e1cf88b18bfa181	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/2014Q1_google_earnings_release.pdf	[Actions]
0c8ac0a5cb24bba16deec2c3839ca4f1	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/20110630_google_100.pdf	[Actions]

Once the data store is created, select it to create the app.

This starts the process to import the documents from Cloud Storage or your selected data source.

The Documents and Activity tabs are updated as documents are imported.

Summary

The screenshot shows the 'Preview' tab selected in the Agent Builder interface. The top navigation bar includes 'Agent Builder', 'Data', 'Preview' (which is highlighted in blue), and 'Integration'. The breadcrumb path is 'Apps > testrec > Recommendations Preview'. On the right, there's a 'LEARN' button. The main content area is titled 'Preview your recommendations' with the sub-instruction 'Choose a document to see a list of similar documents'. A 'Document ID *' input field contains '00d3f9569bb04d15f44ad6636535b787'. Below it is a 'URI' field with the value 'gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/2022_Q2_Earnings_Transcript.pdf'. To the right of the URI is a 'GET RECOMMENDATIONS' button. A link 'Choose a new ID to update recommendations' is also present. A 'Filter' input field is at the top of a table. The table has columns: Rank (with an up arrow), ID, URI, and Actions. It lists five recommendations:

Rank ↑	ID	URI	Actions
1	e528afa38b3a739bc98bfff0e840fe98	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/20230203_alphabet_10K.pdf	[Edit]
2	34b4fd7aac0259cbb37a92a523f5a38d	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/20220726_alphabet_10Q.pdf	[Edit]
3	a583b7c6aa8d02401393c8cac277d2d0	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/20220427_alphabet_10Q.pdf	[Edit]
4	4635f88090410ce63427d19ee7b39710	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/20221025_alphabet_10Q.pdf	[Edit]
5	513da7d1b9f7739087606aadc626f2dc	gs://cloud-samples-data/gen-app-builder/search/alphabet-investor-pdfs/2022Q4_alphabet_earnings_release.pdf	[Edit]

You can preview the recommendations from your app on the Preview page in Agent Builder.

Click the Document ID field, and select the ID of the document that you want recommendations for. To retrieve a list of recommended documents, click **Get Recommendations**.

Integrating recommendation apps

Note that unlike Search, there is currently no recommendations widget for deploying your app. You can test your app from the Integrations tab in Agent Builder by supplying a document ID.

A curl command that makes an API call is generated which you can run in Cloud Shell. You can integrate the API call into your server or application to generate recommendations.

Here is a sample curl command invocation of the API and the output response:

```
curl -X POST -H "Authorization: Bearer $(gcloud auth print-access-token)" \
-H "Content-Type: application/json" \
https://discoveryengine.googleapis.com/v1beta/projects/652546730991/locations/us-central1/events:record \
-d '{ "userEvent": { "eventType":"view-item", "userPseudoId":"<USER_PSEUDO_ID>" } }' \
-H "Content-Type: application/json" \
> https://discoveryengine.googleapis.com/v1beta/projects/652546730991/locations/us-central1/events:record \
> -d '{ "userEvent": { "eventType":"view-item", "userPseudoId":"<USER_PSEUDO_ID>" } }' \
{
  "results": [
    {
      "id": "e528afa38b3a739bc98bfff0e840fe98"
    },
    {
      "id": "34b4fd7aac0259cbb37a92a523f5a38d"
    },
    {
      "id": "a583b7c6aa8d02401393c8cac277d2d0"
    },
    {
      "id": "4635f88090410ce63427d19ee7b39710"
    },
    {
      "id": "513da7d1b9f7739087606aadc626f2dc"
    }
  ],
  "attributionToken": "ChQxNjkOTc4ODkzNjQ0ODI1MTE1OBoVdGVzdHJlY18xNzE2Mzk0"
}
```

What Did I Walk Away With?

In this module you learned about:

- ✓ Vertex AI Search and its capabilities.
- ✓ Creating and integrating a search app into a website.
- ✓ Apps and data stores and how they work together to power search and recommendations.
- ✓ Creating and testing a generic recommendations app.



Congratulations on completing this training!

