



**DATA INNOVATION:**

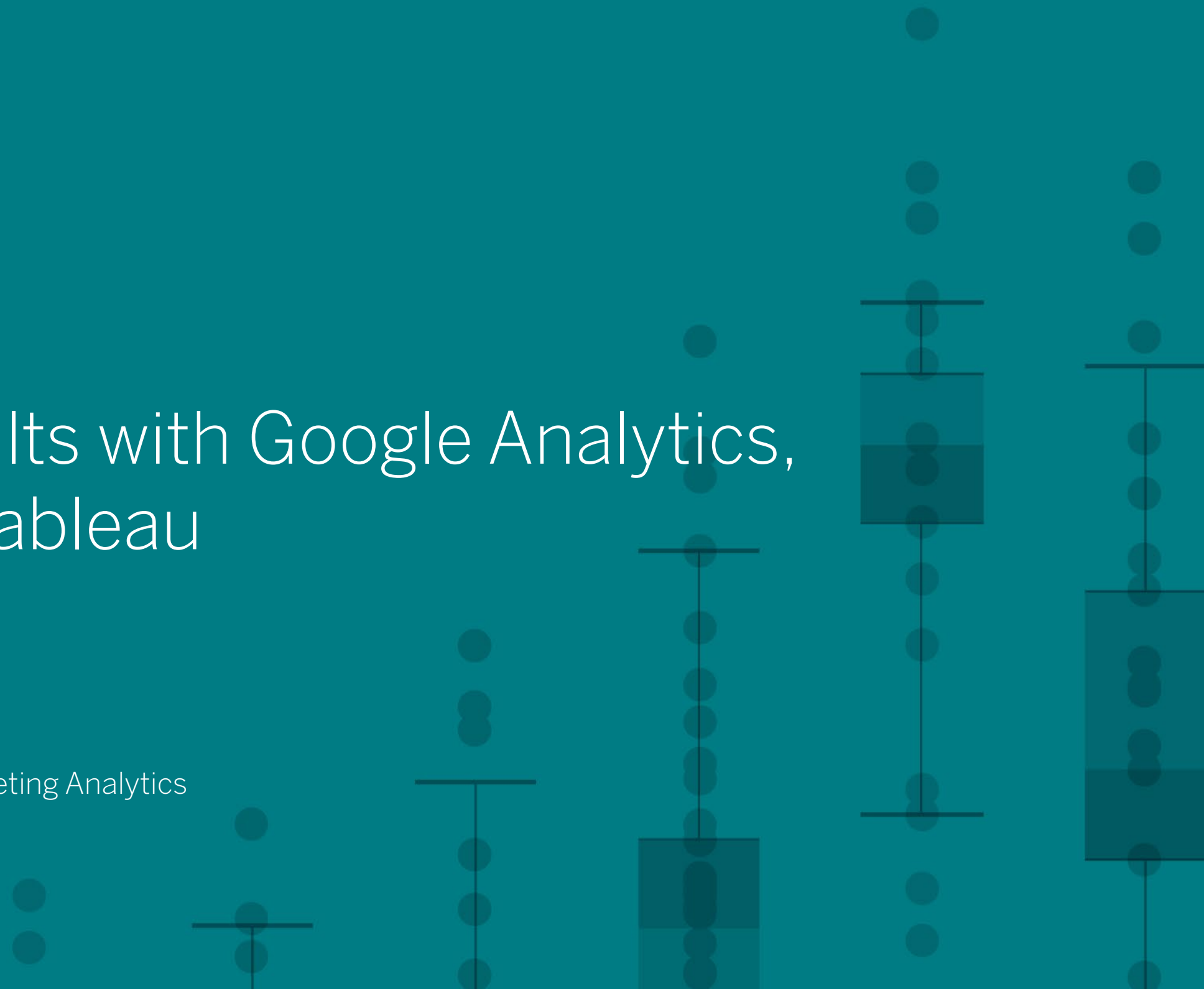
# Nest drives results with Google Analytics, BigQuery, and Tableau

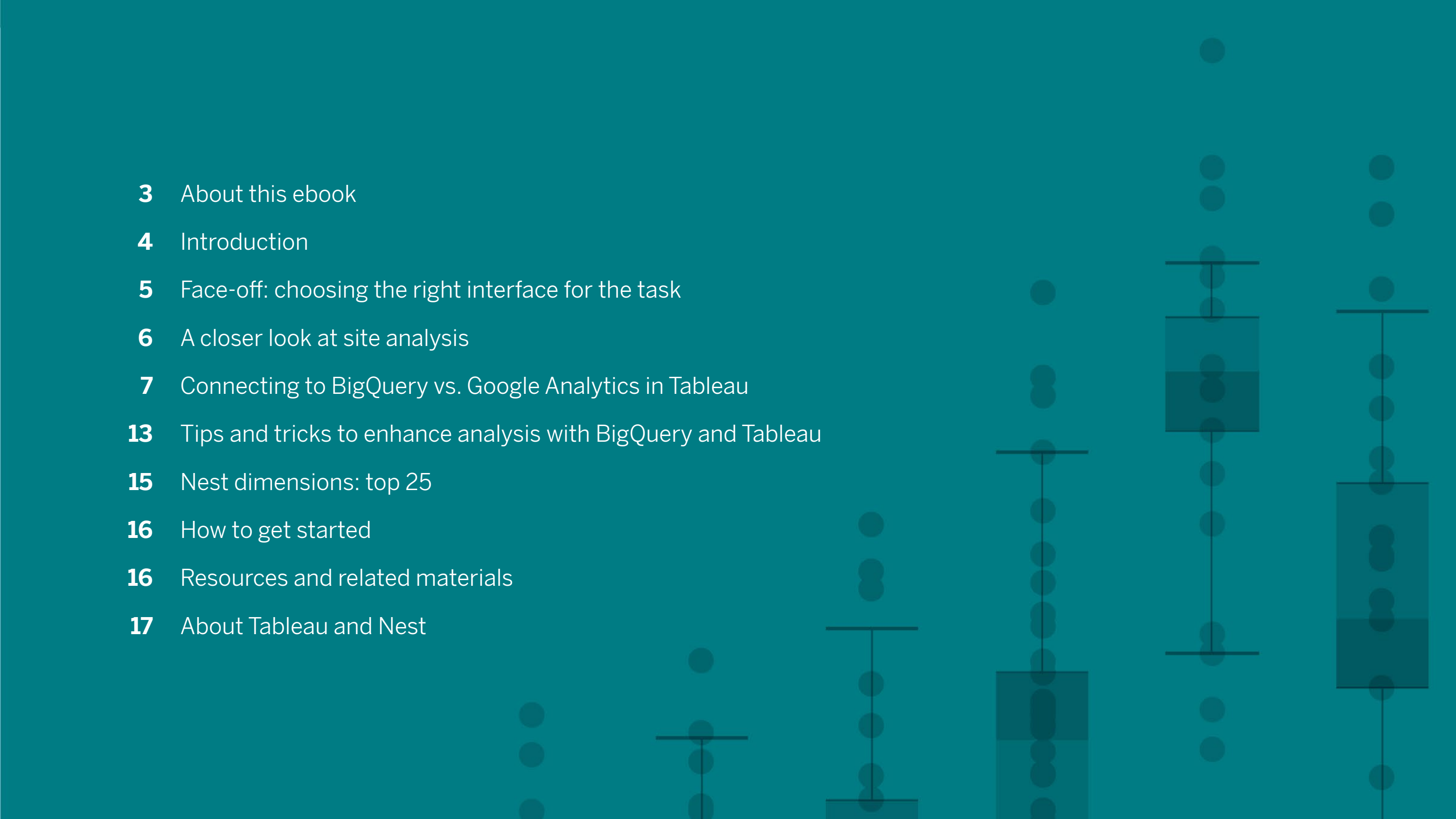
**Jesse Nichols**

Head of Growth  
Nest

**Alex Bain**

Head of Marketing Analytics  
Nest



- 
- The background features a teal gradient with several vertical box plots and scattered dots of varying sizes, creating a data visualization theme.
- 3** About this ebook
  - 4** Introduction
  - 5** Face-off: choosing the right interface for the task
  - 6** A closer look at site analysis
  - 7** Connecting to BigQuery vs. Google Analytics in Tableau
  - 13** Tips and tricks to enhance analysis with BigQuery and Tableau
  - 15** Nest dimensions: top 25
  - 16** How to get started
  - 16** Resources and related materials
  - 17** About Tableau and Nest

## About this ebook

This ebook is intended for marketing analytics professionals who currently use Google Analytics and BigQuery and are interested in how the Tableau platform can enhance data insights and drive business opportunities.

In this e-book, you'll learn:

- How Nest decides between Tableau and Google Analytics for visualizing marketing data
- How Nest leverages Tableau's native connection to Google BigQuery
- Tips and tricks to enhance analysis with BigQuery and Tableau

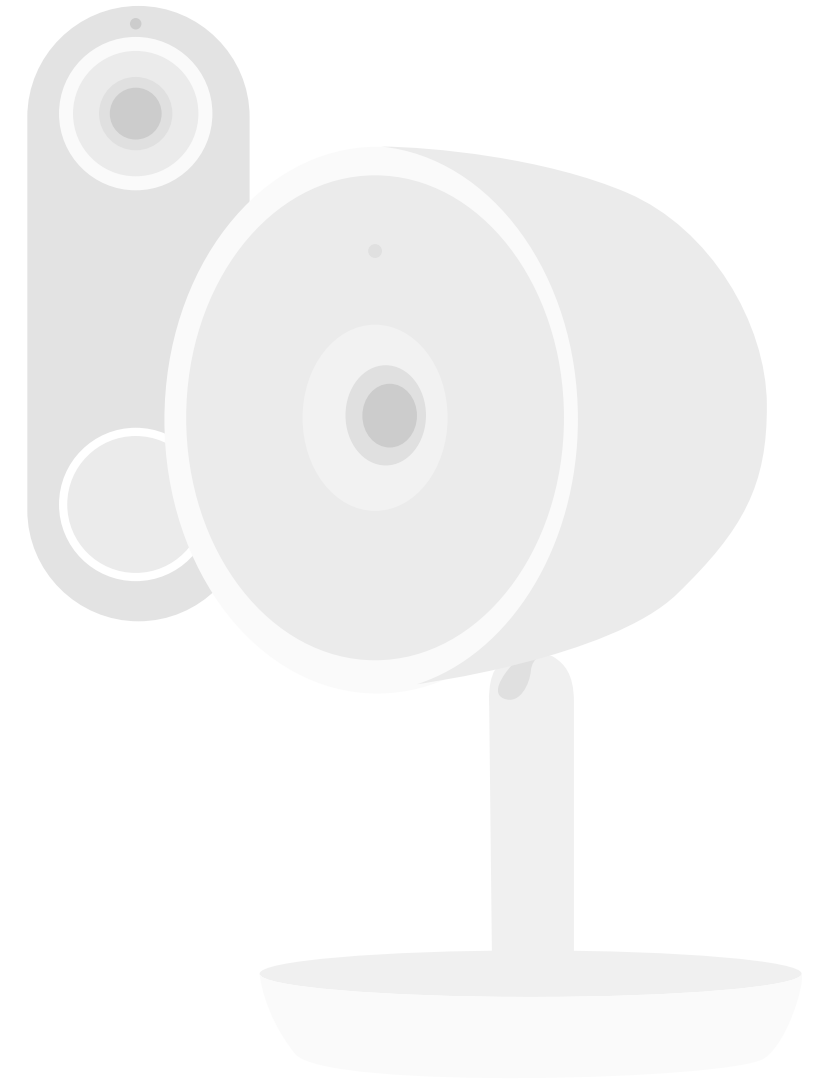


## Introduction

Nest designs and manufactures smart products for the home, including security systems, smoke detectors, thermostats, locks, and doorbells. They have built a company culture of experimentation and innovation, focused on building simple, beautiful products that leverage the latest technologies to make homes safer, more energy efficient, and more aware.

Nest products are sold in 21 countries, and installed in almost every country in the world. Solidly committed to growth, and looking to turbo-charge their e-commerce and marketing businesses, Nest has implemented Google Analytics 360, Google BigQuery, and Tableau.

Let's take a closer look at how Nest is achieving results using all of these tools in tandem.



## Face-off: choosing the right interface for the task

How does Nest decide between Tableau and Google Analytics (GA), when both user interfaces are capable of creating easy-to-interpret visualizations? When would you rely on the capabilities of one over the other?

Google Analytics	Tableau
Basic channel/campaign reporting to answer simple questions	Answering questions that can only be addressed after joining or blending multiple data sources
Direct integration with Google products not available via Tableau's native connections, outside of the Web Data Connector (e.g. YouTube Analytics, DoubleClick, etc.)	Creating fully customized dashboards that track campaign or channel performance
	Performance vs. goals analysis

# A closer look at site analysis

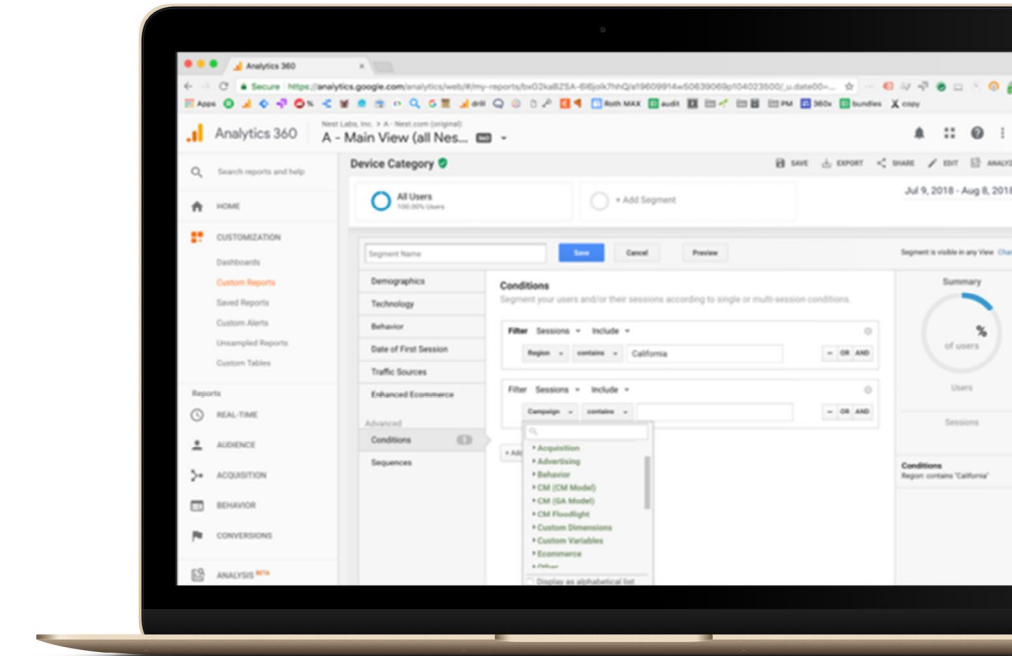
Nest's site analysis in Google Analytics consists of:

- Searching through canned reports
- Open-ended data exploration
- Segment builder

Nest's site analysis in Tableau consists of:

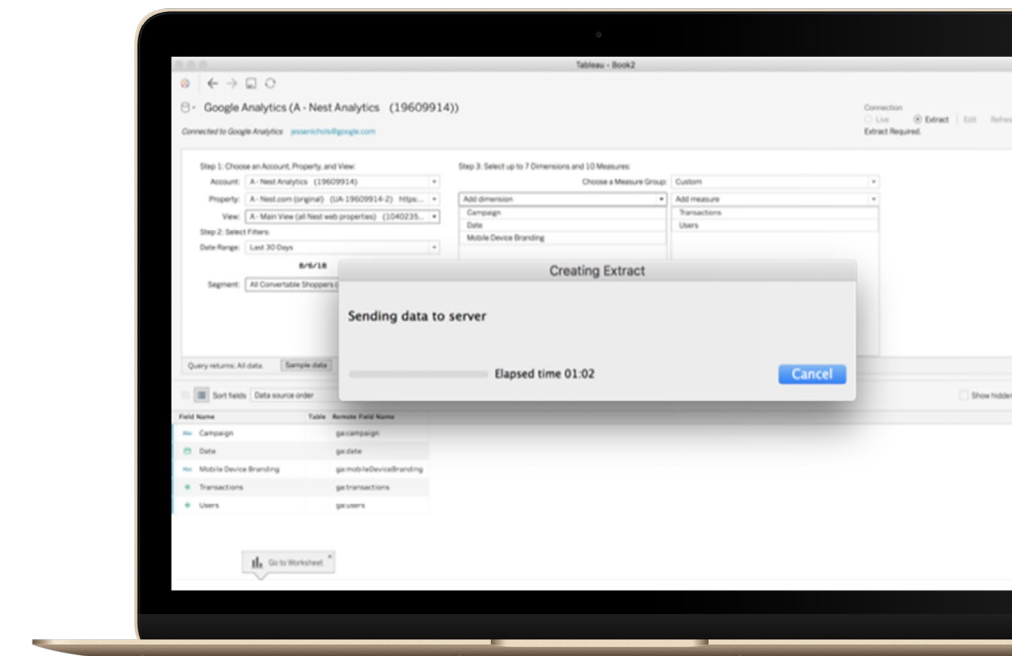
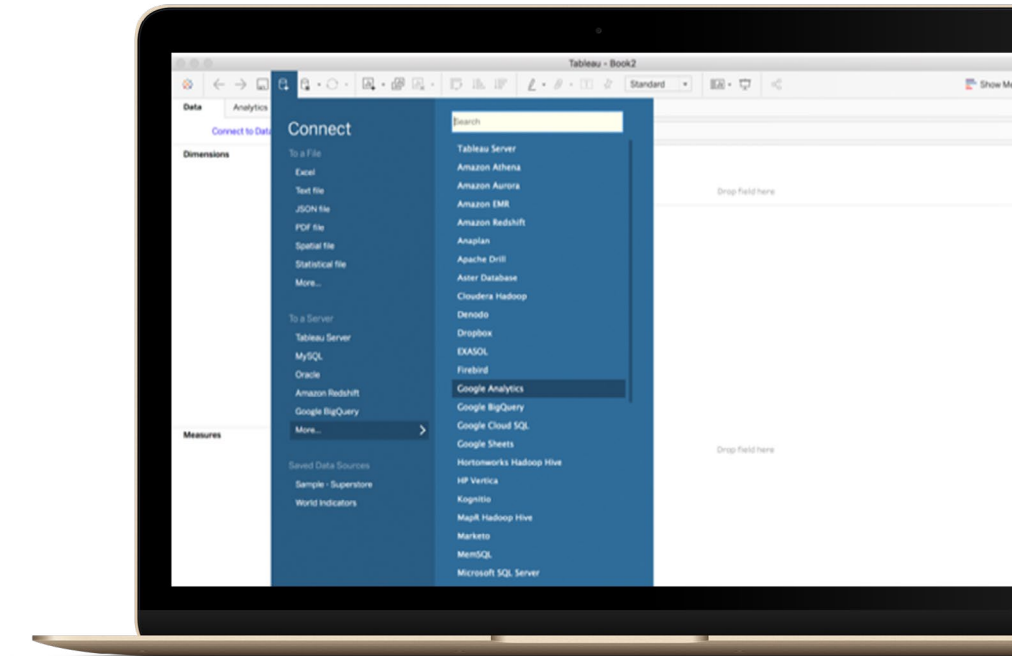
- Fully-customizable dashboards
- Flexible filters
- Parameterizing dimensions

In GA, segment builder is used as a “what you see is what you get” query builder to find answers and build custom metrics. For example: how many people saw the Nest Hello doorbell page during launch week, and how many of those visitors actually bought that product? What percentage of thermostat owners ever interact with the Energy History Screen?



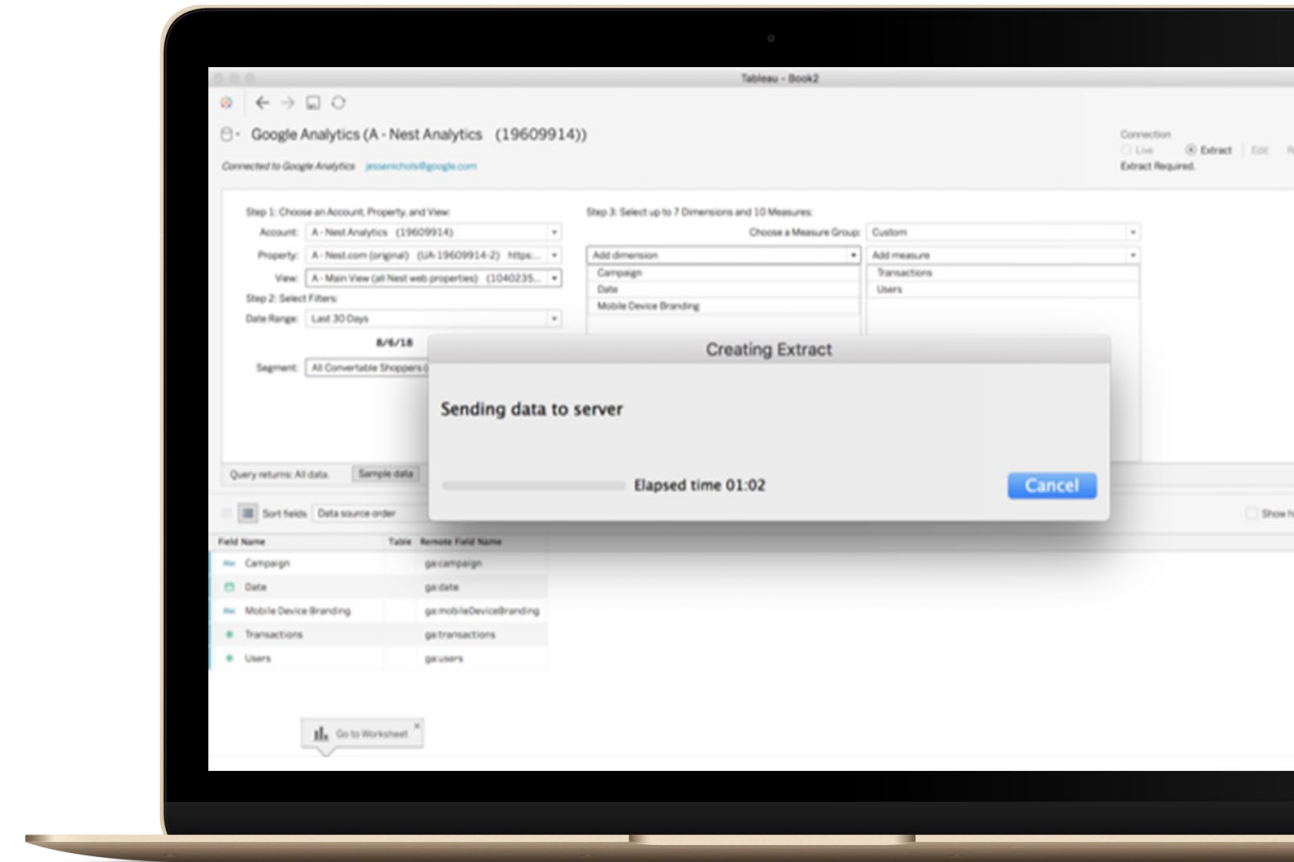
# Connecting to BigQuery vs. Google Analytics in Tableau

Tableau has native connections to both Google BigQuery and Google Analytics. What extra benefit do you get from connecting to your GA data residing in BigQuery versus using the direct connection to GA from Tableau?



## Speed

- GA connection requires you to take an extract of your data. Extract creation can take time, especially if you're pulling in a large date range.
- Tableau's live connection to BigQuery allows you analyze massive amounts of data without requiring in-memory extracts





## Unsamped historical data

- GA restricts the amount of data that it returns in a query. When you try to retrieve more data than GA allows in a single query, GA returns sampled data instead. For specific metrics or highly segmented groups, the sample data returned from the GA connection can be so small that it's unusable.
- Even in GA 360, you'll often run into sampling when analyzing more than 13 months with a custom segment applied.
- Google BigQuery allows you to query all of your data, no matter the size or complexity.



## Unlimited control over segmentation within data

- During analysis, there's nothing more frustrating than knowing an answer is somewhere in the data, but limitations in the tool you're using prevent you from accessing it.
- Google Analytics API allows a maximum of 7 dimensions and 10 measures to be used in a single extract, which can hinder analysis that requires quick access to all of your GA data.

### Segments you can't build in GA

- Events triggered from a specific page
- Shopper buys two different products in one transaction
- Most all hit-level logic (multi-hits in one session)



## Segments as metrics

When you apply a segment in Google Analytics (using either the UX or Tableau connection) you apply it to all metrics in the report you're looking at. But often, you only need the segmented count of sessions or users per day. Or, you may need that segmented daily count to be part of a calculated field. This is challenging in GA, and involves exporting to a spreadsheet. Google BigQuery and Tableau allow you to create this type of calculation with ease.

Using segments as metrics, segments

- Are no longer dependent on goals
- Can be defined ad hoc and applied retroactively
- Can be user-level or session-level

### A closer look

A perfect example is how Nest defines “shoppers” at Nest. A shopper is someone who engages with the hardware product pages or clearly defined shopping activities. Only limited segment of total visit population are shoppers. For example, if you had a big support issue you'd have a surge in traffic, but a decline in conversion when really your shopper metric was totally unaffected.

Nest needed to pull shoppers out of the segment, and make that the de facto denominator. The numerator has to start with that logic as the baseline and then whittle down further from there. If Nest wants to know what percentage of shoppers bought a thermostat and smoke alarm together and see how that changes over time when new cross-selling features are rolled out, Nest can now do that.

Any segmentation logic can become a numerator or a denominator:

**[sessions with a specific product purchase]**

*divided by*

**[sessions that triggered a specific event]**

## Metrics as dimensions

There's never been a better case for CASE statements!

Use CASE statements to:

- Group sessions based on whether or not they fulfilled some segment logic
- “Slice by” and “color by” to magically extend the utility of all summarized metrics



# Tips and tricks to enhance analysis with BigQuery and Tableau

## Blending in marketing data

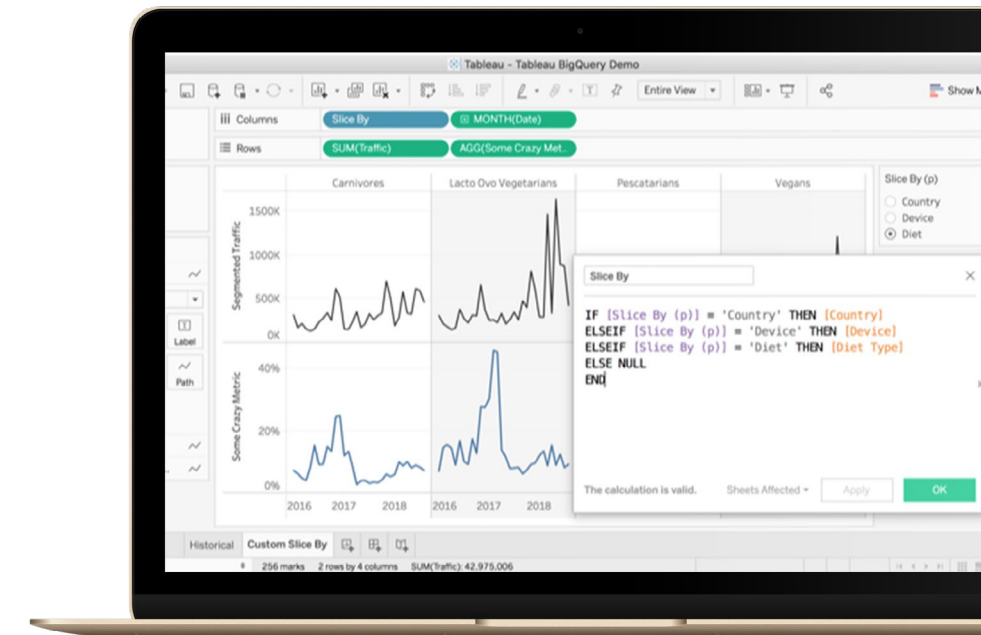
Tableau enables you to supplement your BigQuery data with related data in other sources. Nest uses data blending to calculate Return on Ad Spend (RoAS), and see the gaps between orders versus shipments.

## Parameterizing dimensions

Parameters are a classic Tableau feature, but they become even more powerful after you've created dimensions from segmented metrics via logic calculations like CASE and IF/THEN statements, which makes it easier for your data consumers to filter and control the dashboard.

Nest uses parameterizing dimensions to:

- Grant access to only necessary filter controls, hiding or grouping the rest
- Take underlying KPIs to build visualizations, and use parameters to split by major metrics and dimensions
- Build views around business goals



## Pre-aggregated tables vs visit-level tables

What's the difference between pre-aggregated versus visit-level tables?

Here's how Nest decides which table type to use:

Pre-aggregated table	Visit-level table
Super-fast	Don't need to think of every aggregation upfront
Easier to do historical analysis	Easier to do user-level analysis
Just keep appending to the table	

## Nest dimensions: top 25

Out of the 200+ Google Analytics dimensions and metrics that Nest uses in Tableau analysis via BigQuery, this list helps the team reach the majority of their answers.

device.deviceCategory	hits.page.hostname	hits.eCommerceAction.action_type
	hits.page.pagePath	hits.eCommerceAction.step
geoNetwork.country	hits.page.pageTitle	hits.transaction.transactionId
geoNetwork.region		hits.transaction.transactionRevenue
geoNetwork.metro	hits.eventInfo. eventCategory	totals.transactions
	hits.eventInfo.eventAction	hits.product.productSKU
trafficSource.medium	hits.eventInfo.eventLabel	hits.product.v2ProductName
trafficSource.source		hits.product.productQuantity
trafficSource.campaign	customDimensions.index	hits.product.productRevenue
trafficSource.adContent		
trafficSource.keyword		

# How to get started

Tableau has long had deep integration with Google Cloud Platform's offerings (including native connections to Google Analytics, Google BigQuery, Google Cloud SQL, and Google Sheets). This allows deployment at scale and with elasticity for organizations, while allowing IT to maintain data integrity and governance. Tableau Server also runs seamlessly in Google's cloud infrastructure so customers preferring to deploy all of their applications inside GCP have a complete solution from Tableau.

## Related materials

### *Marketing Analytics Quick Start*

This joint offering is designed to seamlessly integrate the two platforms for a more powerful analytics experience, and includes a no cost two-week set-up and training support program. Our experts will embed themselves in your organization to consolidate and integrate your marketing data sources, populate Tableau, and train your team.

### *Google BigQuery and Tableau: Best Practices*

See how Tableau and Google BigQuery allows people to analyze massive amounts of data and get answers fast.

## Explore other Tableau resources

[Product Demos](#)

[Training & Tutorials](#)

[Community and Support](#)

[Customer Stories](#)

[Tableau Solutions](#)

[Ask Data Demo](#)



## About Tableau

Tableau (NYSE: DATA) helps people see and understand data and explore with limitless visual analytics. Customers can build dashboards and perform ad hoc analyses in just a few clicks. They can share their work with anyone and make an impact on their business. More than 86,000 customer accounts in nearly every country use Tableau to solve data problems, including Fortune 500 corporations, small and medium-sized businesses, government agencies, universities, research institutions and non-profits.

See how Tableau can help you by [downloading the free trial](#).

## About Google BigQuery

Google's Cloud Platform is the enterprise solution of choice for many organizations with large and complex data problems. Future-proof your infrastructure with secure, global, high-performance, cost-effective cloud services built for the long haul. Tap into seriously powerful data and analytics to find answers faster and build better products. Grow from prototype to production to planet-scale, without having to think about capacity, reliability, or performance.