

How 5 Companies Build Modern Customer Data Infrastructure

Drive Innovation And Reduce Costs
with Twilio Segment



TABLE OF CONTENTS

1. The Developer's Dilemma: Build, Buy, or Both

2. Modern Customer Data Infrastructure (+ How a Fortune 500 Company Is Doing It)

3. How Fast-Growing Companies Implement Customized Data Infrastructure

Data Collection + CleanChoice Energy

Data Processing + Typeform

Data Aggregation + Norrøna

Data Activation + SmarttBot

4. Summary

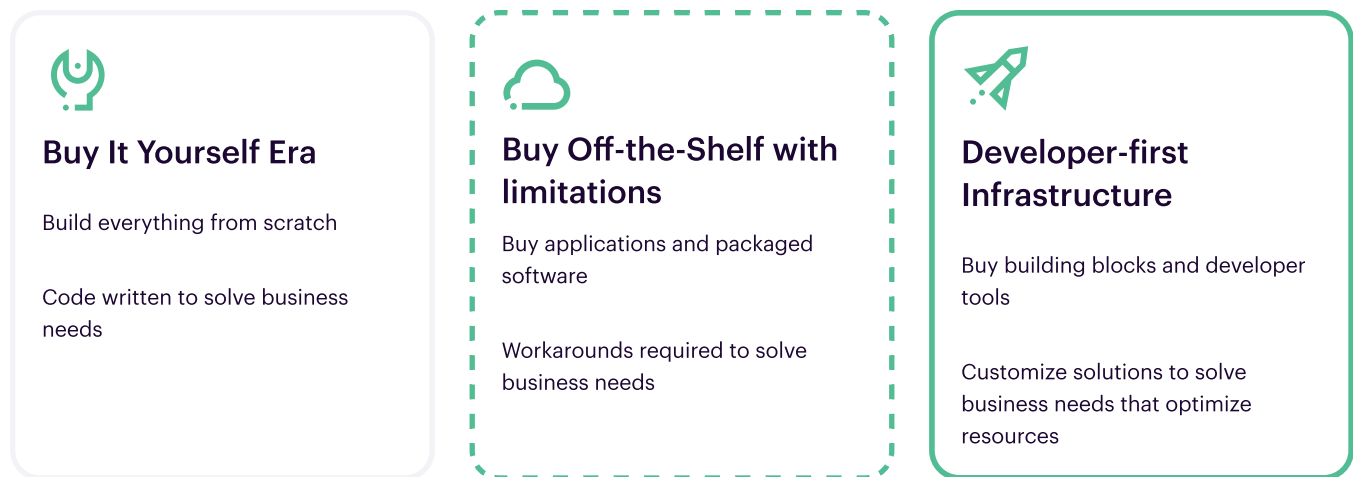
The Developer's Dilemma: Build, Buy, or Both

We're in the midst of a fundamental shift in how companies adopt and implement software.

In the "build it yourself" era, in-house development teams were responsible for building hyper-tailored solutions from scratch. This was resource-intensive, slow, brittle, and expensive.

Then came the rise of cloud computing and SaaS, and businesses could increasingly buy off the shelf tech to solve problems. This automated tedious engineering work and optimized resources, but was less flexible than an in-house solution.

Now, we're moving toward a world in which companies are increasingly buying infrastructure "building blocks" that empower developers to customize a solution to meet their exact needs.



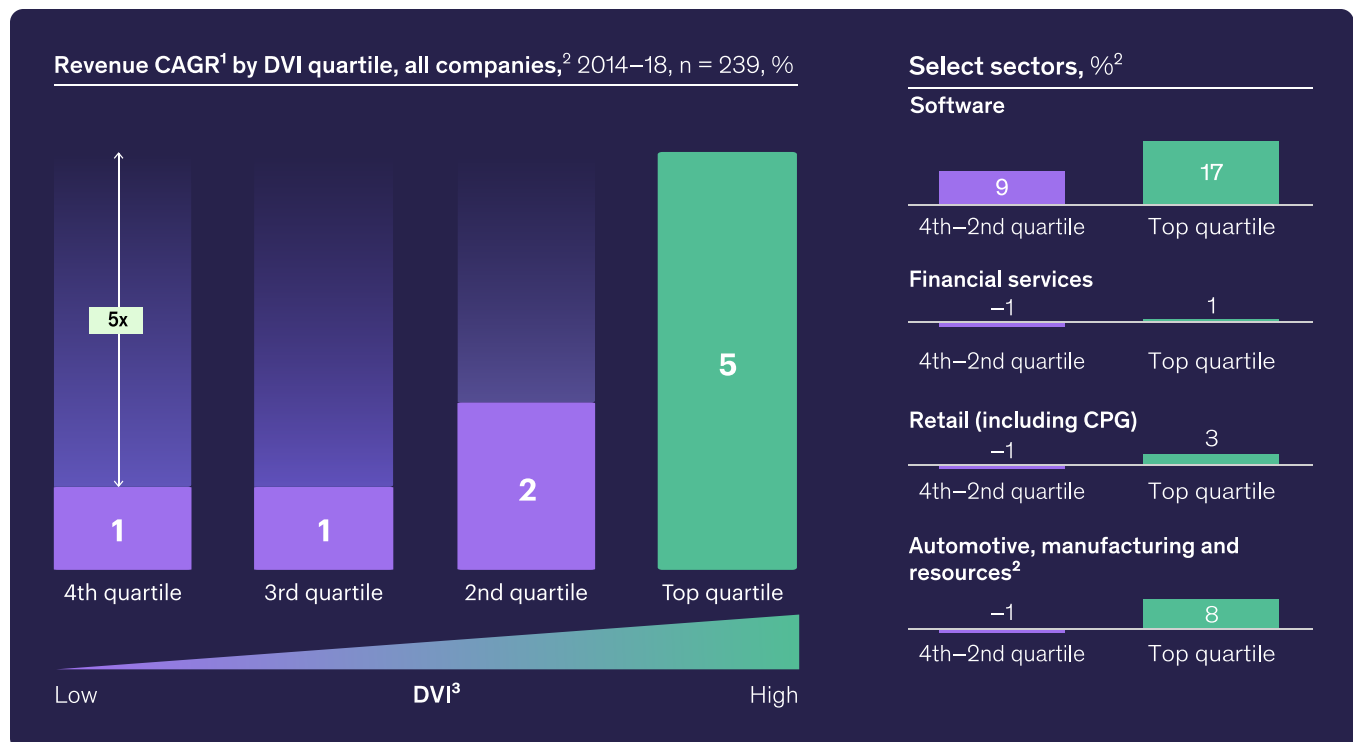
To make this a reality, it's imperative businesses empower developers with the most powerful infrastructure and developer tools on the market since developers are on the front lines building innovative solutions.

“Improving business performance through software development comes down to empowering developers, creating the right environment for them to innovate, and removing points of friction.”

McKinsey

In a recent study, [The Developer Velocity Index \(DVI\)](#), McKinsey found that companies who unleash the full potential of developer talent are more likely to have an innovation edge and outperform others in the market.

Companies in the top quartile of the Developer Velocity Index (DVI) outperform others in the market by four to five times.



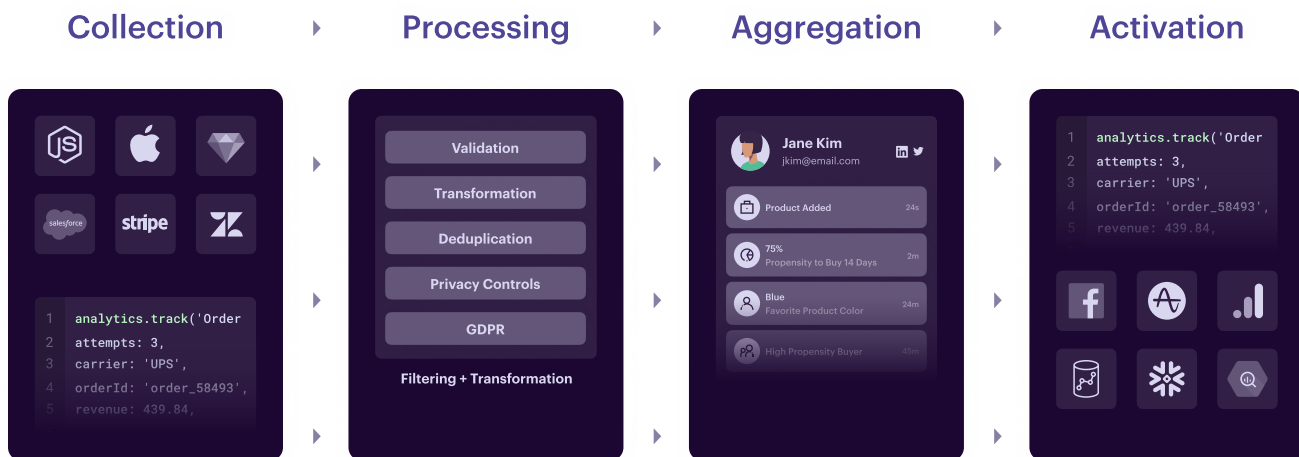
It's clear that companies today won't win with a one-size-fits-all solution. Companies today must invest in software that empowers developers to build differentiated experiences.

Modern Customer Data Infrastructure

When it comes to implementing modern customer data infrastructure, the fastest-growing companies in the world are choosing software that provides CDP building blocks and empowers developers to customize.

Companies like [FOX](#), [Retool](#), and [Norrøna](#) are implementing modern CDP solutions that can be customized to meet their exact needs, which in turn drives faster innovation and better business results.

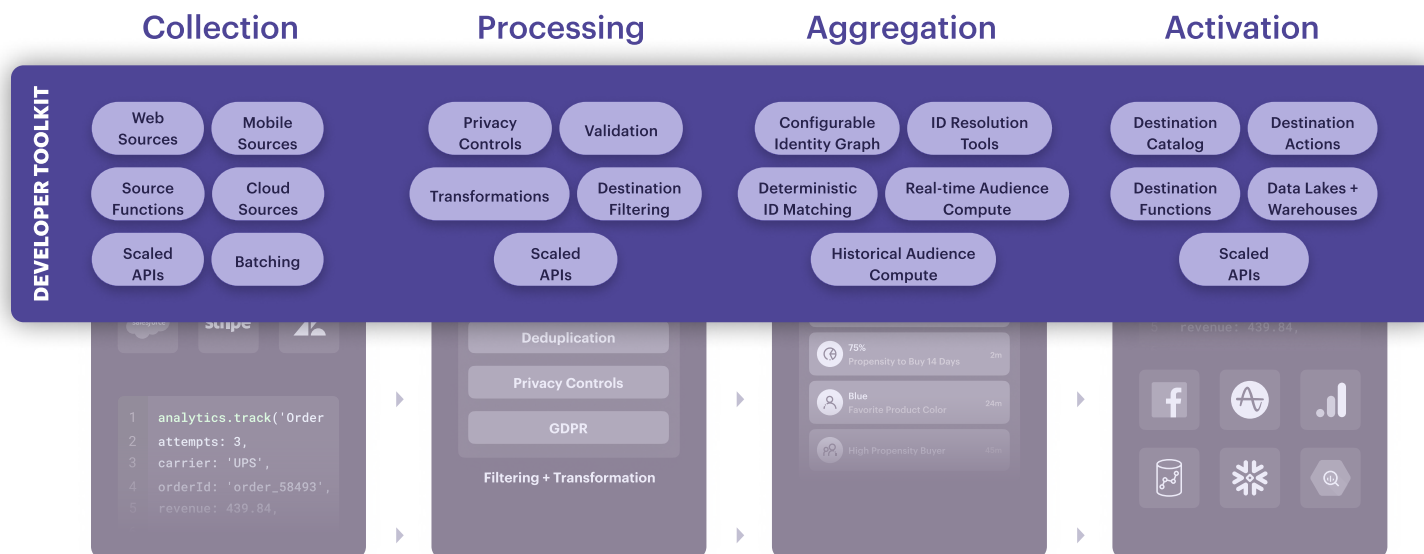
There are four essential building blocks for modern customer data infrastructure:



Modern customer data infrastructure also requires powerful developer tools across each of the four essential building blocks to unlock the flexibility businesses need.

World-class developers don't want to be blocked by out of the box software; they want to be enabled to create innovative solutions that drive results.

Segment's [Developer Toolkit](#) plugs into Segment's best-in-class CDP infrastructure so developers can easily build custom capabilities across Data Collection, Data Processing, Data Aggregation, and Data Activation.



CDP solutions that offer advanced developer tools, like [Segment](#), mean that companies no longer have to be blocked by one-size-fits-all CDPs or waste valuable engineering resources architecting a data infrastructure from scratch. Instead, companies have the flexibility to build differentiated products and experiences in-house using a “building blocks” approach.

Retool

“Building the basic infrastructure needed to collect and unify customer data in-house is costly and requires constant support from engineers. With Twilio Segment as our CDP, our developers are building on top of a strong data infrastructure from day one. Empowered by data they can trust, they have the freedom to develop new features and deliver world-class experiences that put our customers first.”

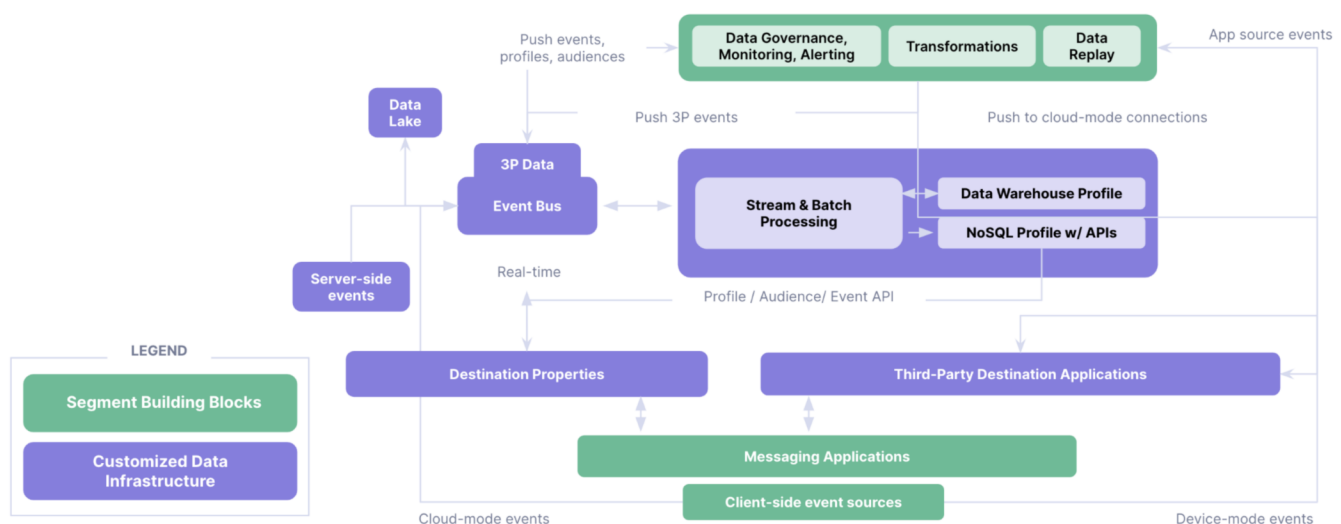
Jane Kelly
Head of Growth

How does a Fortune 500 company implement a modern customer data infrastructure solution?

A Fortune 500 company implemented a modern CDP solution to meet its exact business and technical needs.

The company implemented Segment building blocks (in green) to accelerate time to value and automate tedious ongoing data engineering work, and built custom data capabilities (in purple) with advanced developer tools for maximum flexibility.

Customer data infrastructure at a Fortune 500 Company



The result is a combination of “built-and-bought” customer data infrastructure that meets their exact needs, solves complex challenges, optimizes resources, and enables their company to innovate faster.

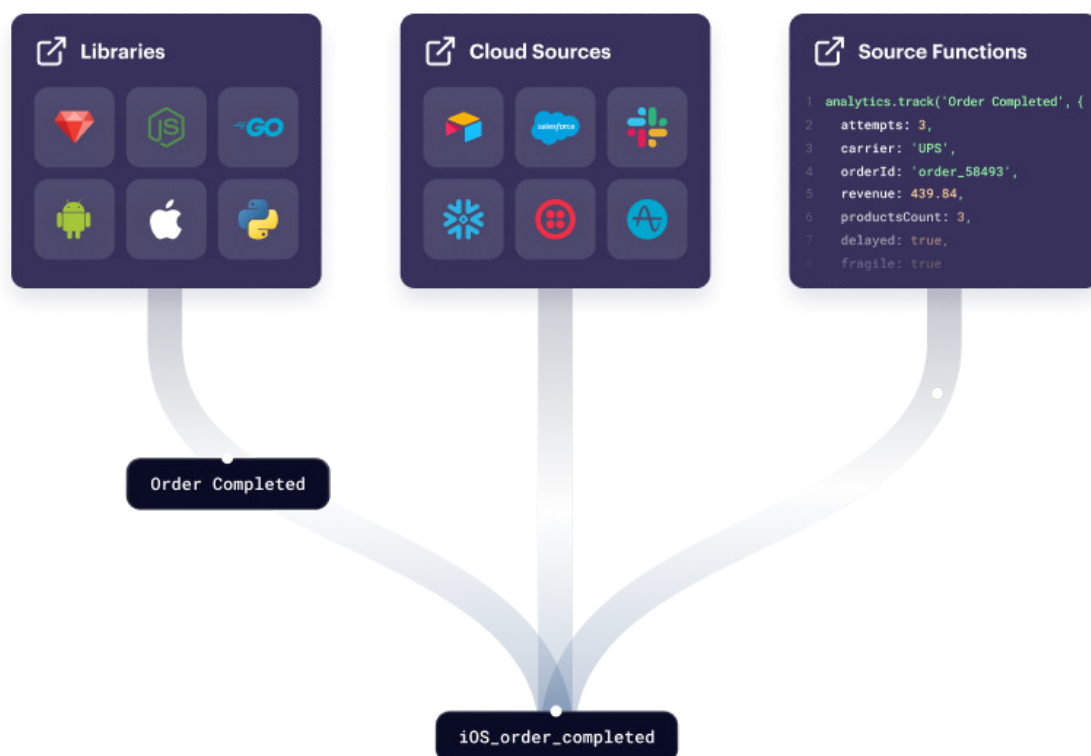
How Fast-Growing Companies Implement Customized Data Infrastructure

Let's dive into how some of the fastest-growing global companies are customizing their customer data infrastructure across the four essential areas

Data Collection

Companies need the ability to collect user behavior data across all channels, platforms, internal tools, and any other place where first-party customer data originates.

With Segment [Source Functions](#), a feature in Segment's Developer Toolkit, data can be brought in from any upstream tool or service that supports outbound webhooks. This gives developers the ability to easily add custom data sources and application destinations, in addition to the 400+ already in the [Segment catalog](#).



How does CleanChoice Energy implement customized Data Collection?

CleanChoice Energy is a climate tech company that offers 100% renewable energy and climate solution products to American homes and businesses. CleanChoice Energy is in a highly regulated industry and needed developer tools to customize data collection and activation functionality to meet its unique business needs.

CleanChoice Energy implemented Segment to power its data infrastructure and scale marketing and personalization efforts. The CleanChoice team leverages Segment's SDKs and Functions to build custom data connections to electric utility providers. As a result, the company has decreased engineering time-spent on building and maintaining data infrastructure by 90% per year.



"Segment has given us the operating leverage we need to scale, allowing us to work smarter not harder. We're creating real change within our organization which translates to helping more customers be more sustainable."

Anthony Hoang
CTO

[Read the full story here.](#)

Data Processing

Data Processing refers to a CDP’s ability to validate and enforce a data-defined schema, clean and standardize data, and automatically enforce best-in-class data standards. It also includes the platform’s ability to centralize compliance and privacy rules, and accelerate compliance with regulations.

Segment’s Privacy Controls give companies control over whether specific data is allowed to enter Segment at the source level. Similarly, Segment Protocols gives companies tools to automate and streamline data governance to protect data quality.

Different corporations need different types of data processing and different levels of data controls. With Segment Transformations, a feature in Segment’s Developer Toolkit, Segment users can align event collection with their organization’s unique business model, and use transformations to map event and property names to satisfy the requirements of destinations.

Before	After
<pre>{ "event": "order_completed", "properties": { "order_id": "123456789" } }</pre>	<pre>{ "event": "Order Completed", "properties": { "order_id": "123456789" } }</pre>

How does Typeform implement customized Data Processing?

Typeform, a Barcelona-based SaaS company specializing in online forms and surveys, was growing quickly and unable to enforce consistent data standards and tracking across departments. They had multiple events with very similar names, such as `useThisTemplate` and `useThisTemplate`, which meant events were frequently used incorrectly.

Using [Segment Transformations](#), Typeform was able to align event tracking with the exact needs of the business and standardize tracking across the organization. Typeform can now enforce custom data controls more effectively, which resulted in a reduction of tracked events by 75% and an improvement in data trust company-wide.

Typeform

“Until we started standardizing our data, people didn’t realize how messy it had become. With Protocols, we can be confident that data quality issues don’t happen anymore.”

Colin Furlong
Business Intelligence Analyst

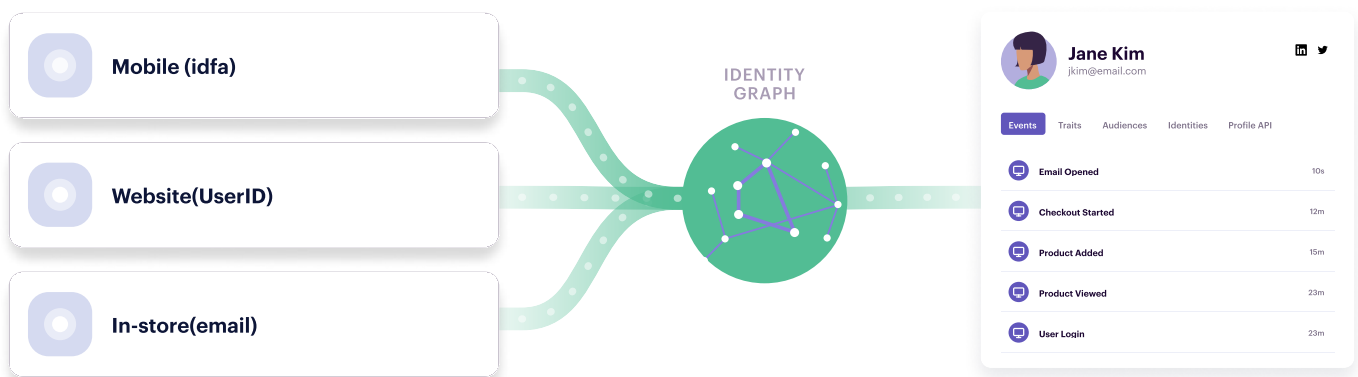
[Read the full story here.](#)

Data Aggregation

Data Aggregation is the ability to build and enrich unified user profiles, create audience segments, customize identity management rules, and support personalization strategies.

[Segment's Identity Graph](#) merges the complete history of each customer into a single profile, and enables developers to customize identity management rules and use emails, user IDs, device identifiers, or any external identifier needed.

Identity resolution



Using [Segment's Configurable Identity Resolution](#) feature in the Developer Toolkit, companies can further customize the identity graph with protection rules like blocking individual values, limiting the number of merged user profiles, or adjusting the priority and precedence of individual user IDs.

These features ultimately give companies control over how user identities are mapped and merged in Segment. This helps teams understand the customer journey, create customer profiles, deliver personalized experiences at scale, and power custom ML and AI models.

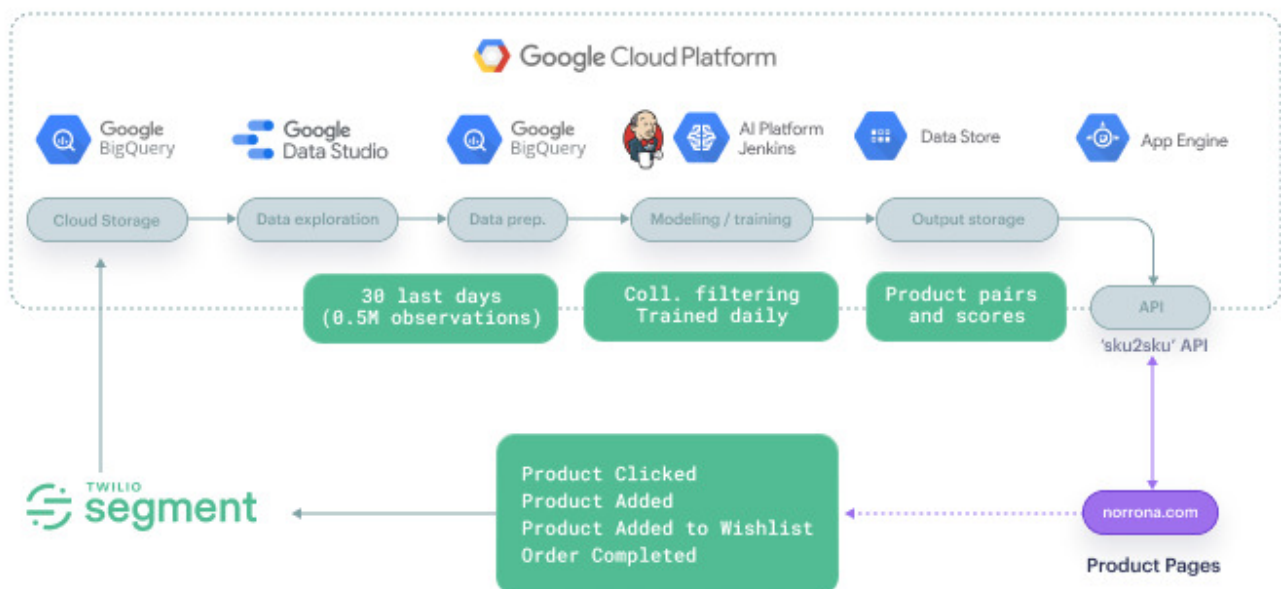
How does Norrøna implement customized Data Aggregation?

Norrøna has been the leading brand of outdoor clothing in Scandinavia for over 90 years. After decades of selling to wholesalers, the company began focusing on a direct-to-consumer business model with e-commerce and customer-facing stores.

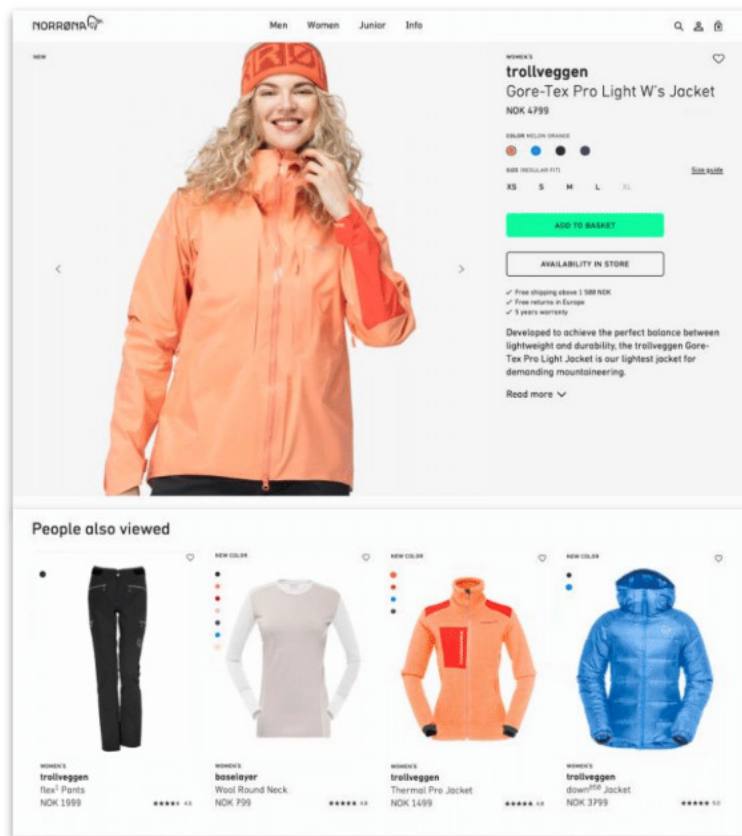
The team implemented Segment as their CDP to help them connect directly with millions of customers. Segment's extensibility enables their team to build customized data functionality, power machine intelligence, and use best of breed solutions to tackle complex business problems across their stack.

For example, Norrøna built a custom recommendation engine to meet their exact specifications using Segment's powerful infrastructure and Developer Toolkit, as well as the machine intelligence tools available on the Google Cloud Platform.

Calculating and Serving Product Proximity



Norrøna's custom recommendation engine architecture



Norrøna's recommended products

The result is a best-in-class data foundation and custom-built recommendation engine that saves hundreds of engineering resources to build and maintain.



“Tools like Segment have allowed us to solve common customer data infrastructure problems without the need for a large and expensive staff. This led us to the decision to build our own recommendation engine using Segment as our customer data platform and then to utilize the machine intelligence tools available on the Google Cloud Platform.”

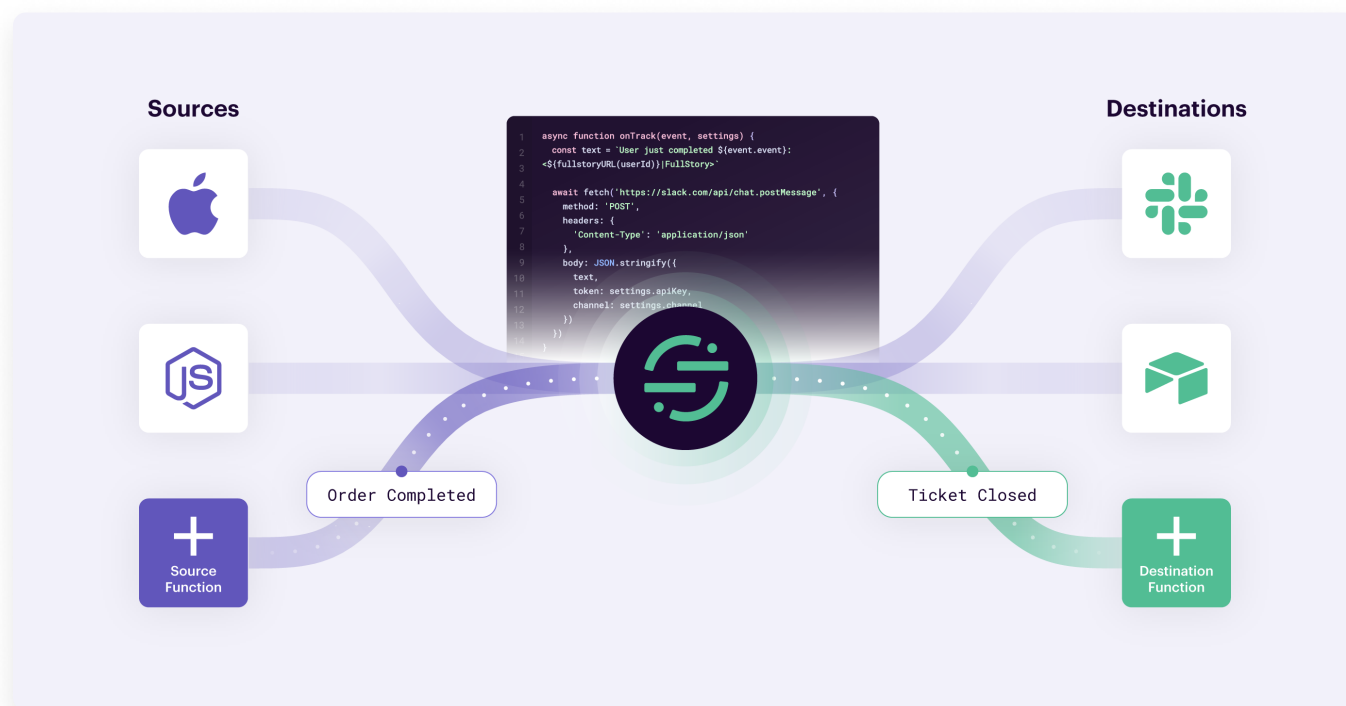
Thomas Gariel
Former Product Manager

[Read the full story here.](#)

Data Activation

Data Activation is the ability to deliver data to all of the tools and systems your teams use. Best-in-class CDPs enable companies to customize or configure integrations to deliver and use data anywhere.

Segment has **400+ out-of-the-box destinations** that are built and continuously maintained to scale. **Destinations Functions**, a feature in Segment's Developer Toolkit, also enables developers to easily create custom destinations that transform, enrich, or map events collected by Segment. After data passes through the function, it is then forwarded to any available public API endpoint.



Use Functions to build custom integrations

Ultimately, this empowers developers to build any custom feature, end experience, campaign, or capability they want using valuable customer data – with fewer resources.

How does SmarttBot implement customized Data Activation?

[SmarttBot](#) is a Brazilian technology company that automates stock exchange investing for individual traders and empowers them to make smart investments on the Brazilian stock exchange.

SmarttBot turned to Segment to implement a customized CDP that would connect its data, maximize engineering resources, and create new growth opportunities for the company.

SmarttBot uses [Destination Functions](#), a feature in Segment's Developer Toolkit, to build custom workflows, product features, and advanced marketing campaigns on top of its app. SmarttBot now has the freedom to activate its customer data and build custom capabilities by connecting any data source, destination, or internal service to Segment using a serverless, low-code function builder.



"Destination Functions helps us create custom workflows and features. Our Black Friday bundle offering was built using Segment Functions, saving a week of work and generating 20% of annual sales in one week."

Gustavo Barros
Product Analyst

[Read the full story here.](#)

SmarttBot leveraged Functions to build a Black Friday campaign to increase purchase value. The business teams wanted to test out offering bundled products with even more benefits over Black Friday, but SmarttBot's application could not support selling bundled products. The team turned to Functions to provide the flexibility and control to build the customized features required to make product bundles available.

The campaign resulted in a significant revenue lift and required far fewer resources than building the functionality in-house.

Summary

Companies today need a CDP that provides both the core building blocks of customer data infrastructure and powerful developer tools to implement data infrastructure that meets their exact needs.

Twilio Segment's Developer Toolkit arms developers with tools to enhance every aspect of the Segment platform and deliver an unprecedented amount of flexibility and customization.

"Twilio Segment CDP offers developers the valuable tools they need to build and maintain a modern data framework without requiring extensive time from engineers, allowing resources to be more effectively deployed to support customer experience efforts."

Daniel Newman
Principal Analyst at Futurum Research

Learn more about how your company can implement a customized CDP solution:

Schedule time with
an expert

[Request a demo >](#)

Create your free
account today

[Get started >](#)



Segment for Engineering
Overview

[Read more >](#)



Building a Custom-Fit CDP
Solution with the
Developer Toolkit

[Watch the webinar >](#)