twilio segment

The quest to be customer-first: Why data warehouses + CDPs are the ultimate dynamic duo

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In the never-ending pursuit of customer centricity, businesses need more than just traditional tools; they need hero technology to better understand and engage their customers.

Over time, two powerful allies have emerged as key players in customer-centric data and marketing strategies: Data Warehouses (DWs) and Customer Data Platforms (CDPs). Data Warehouses have long been the unsung heroes of business intelligence, providing critical insights, and aiding strategic decisions. On the other hand, Customer Data Platforms have revolutionized customer interactions, offering a unified view of customer behavior across various channels.

The convergence of data warehouses and CDPs is the ultimate superhero team-up, combining their strengths to create a formidable force for both customer retention and growth.

In this ebook, we'll cover the following key areas:

- **Background and convergence:** How data warehouses and CDPs have evolved and joined forces to drive customer growth and retention.
- **Building a cross-functional dream team:** The importance of collaboration between engineering, data, and marketing teams to support this technology to do its best work.
- **Applying key use cases:** Practical guidance on leveraging these technologies to create personalized customer experiences and enhance engagement.

Let's dive into how both these technologies used together can transform your business into a customer engagement powerhouse.

Chapter 02

In the beginning: The origin of data warehouses and CDPs

Every superhero needs an origin story.

Data warehouses (DWs) were designed to aggregate and analyze large volumes of historical information. The concept of data warehousing was **first introduced in the late 1980s** by IBM researchers Barry Devlin and Paul Murphy, who envisioned a centralized repository for all organizational data. This vision became a reality as businesses began adopting DWs to consolidate data from various sources, ensuring accuracy and consistency.

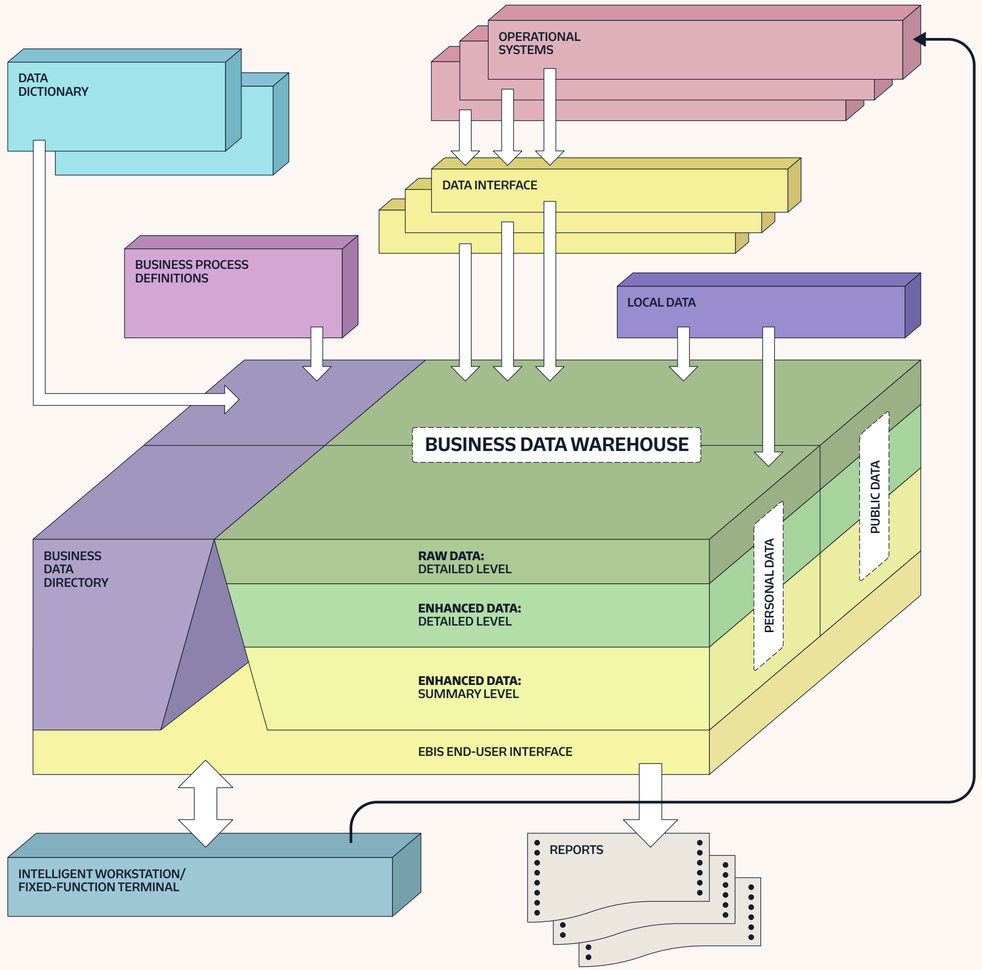
Historically, traditional on-premise data warehouses offered limited flexibility and incurred high costs, from equipment to licensing fees. These systems were rigid, hard to scale, and had a niche focus on BI and analytics, limiting access to a small group of technical users.

However, the rise of **Hadoop** in the mid-2000s marked a shift in the data warehousing landscape. It allowed for open-source distributed data storage and management, offering organizations limitless storage and computational capacity. It proved to be a game-changer in democratizing big data analytics, enhancing accessibility, and removing the cost barriers of traditional data warehouses.

While Hadoop brought significant cost savings, scalability, and flexibility, it also introduced complexities in installation, integration, and governance, which hindered its adoption. Despite its innovative approach, the governance and complexity issues prompted an increased shift towards easier-to-adopt cloud data warehouse solutions.

Today, cloud data warehouses have solved many of these early challenges and evolved to be more than just analytical systems with their separation of computing and storage, like Hadoop-based systems, to ultimately help drive business growth. They have transformed to meet the diverse needs of businesses, helping them better leverage data, empower wider user groups, and drive growth.

The first data warehouse architecture



Source: **The first data warehouse architecture**

Customer Data Platforms, on the other hand, emerged in the early 2010s as a response to the growing complexity of managing customer data in an increasingly digital world. In many ways, they are the response to traditional CRM systems and similar marketing tools which struggled to keep up with the volume and variety of data generated by multiple customer touch points.

CDPs presented a solution to this problem by creating persistent, unified customer profiles **by gathering data from all channels and systems**. This can include anonymous behavioral data from websites and mobile apps, transactional data from POS systems, CRM data, support tickets data, and more. If a customer has several touchpoints with your business, a CDP is generally the best solution for creating a unified view of their interactions across all of your channels.

By stitching together all these interactions **into a cohesive profile tied to a unique ID**, a “golden record” for each customer is formed, offering companies a single source of truth about their customers’ interests, transactions, and relationships.

With this comprehensive view, companies can activate profiles across channels for personalized experiences. Data is routed to downstream systems to enable tailored messaging in marketing automation, personalized product recommendations, consistent service across channels, and more.

Each technology’s path, though complementary, was purposefully distinct, each working to ease a specific organizational pain point. However in recent years with the rise of Big Data, businesses have reached a distinctive turning point that offers an opportunity for both of these platforms to work together.

Chapter 03

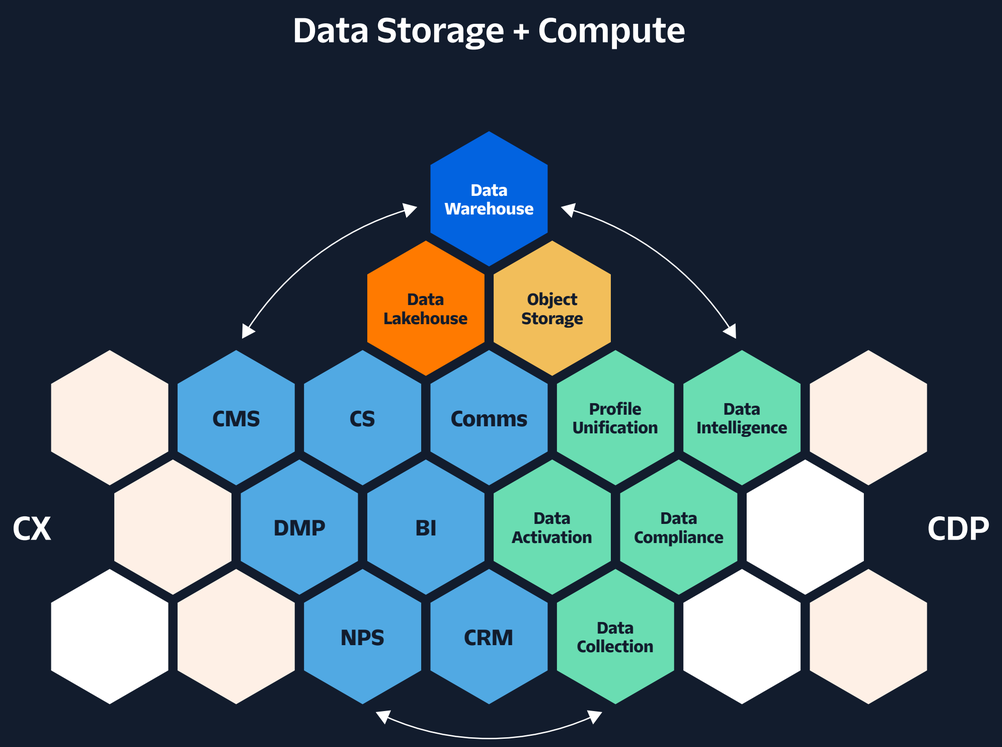
Uniting forces: The evolution of data warehouses and CDPs

Businesses are realizing that growth isn't just about isolated marketing efforts; it's about creating interconnected platforms that adapt to real-time behaviors. With the rise of Big Data, the unique skill sets of Data Warehouses (DWs) and Customer Data Platforms (CDPs) have been reshuffled to, ahem, save the day for modern enterprises.

The intersection of these two powerful solutions has paved the way for a unified approach toward achieving growth goals.

By bringing together the data from a warehouse with the real-time customer data processing capabilities of CDPs, businesses can now create a truly holistic view of their customers.

Essentially, no one system is perfectly designed to be a "single source of truth" without being supplied with data from multiple other systems. The CDP needs to unify data across multiple touchpoints into trusted profiles before sending it to the warehouse where it can be linked to rich relational data sets within the warehouse.



Working together, they can integrate customer event data, which includes information on individual customer actions and behaviors gathered from various sources like website interactions, app usage, and email marketing responses, with object data such as static information like organizational relationships, product associations, and more. Collectively, this data forms a comprehensive customer profile, enabling a more personalized and targeted approach to marketing.

Additionally, this integration offers a platform for robust audience creation and journey building for an overall understanding of customer behavior, preferences, and patterns - providing invaluable insights for marketers to enhance customer experiences and drive growth. In essence, **the integration of CDPs and data warehouses collates and converts** disparate customer data into valuable insights, enabling marketers to deliver personalized customer experiences and facilitate data-driven growth.

Growing your business through data: Maximizing your customer data platform and data warehouse with AWS, Segment, and Artefact

Chapter 04

Building a cross-functional dream team to support these platforms

Team, assemble!

To maximize the potential power of data warehouses and CDPs working in tandem, you'll have to **build a team of internal cross-functional key players**. If we break down the acronym CDP, we should always remember that the goal of working together is to focus on the customer first.

This requires fostering a customer-driven culture that leads by listening to the voice of the customer in the data and building a robust platform for collecting and activating their preferences so we can adapt to the customer's needs as we engage with them.

Organizations can develop a holistic approach to data management and customer engagement by bringing together diverse skill sets and perspectives. Below, we'll identify critical stakeholders from engineering, data, and marketing as well as their strengths and shortcomings. From there, we'll discuss strategies for uniting them to address use cases and drive innovation in customer engagement and retention.

Key stakeholders

Engineering teams

- Essential for implementing and maintaining technical infrastructure for data warehouses and Customer Data Platforms (CDPs).
- Deploy event capture libraries across applications, websites, and mobile platforms.
  - Standardize the capture of behavioral events before sending them downstream.
- Collaborate closely with data and marketing teams to understand and capture specific behavioral events needed to meet requirements.

Data scientists & analysts

- Central to data-driven organizations, extracting insights from data in warehouses and CDPs.
- Empower business users with necessary data for informed decision-making.
- Ensure a unified customer definition across operational systems like help desks, marketing tools, and sales platforms.

Who’s required to set process standards?

Project Champion

Exec Project Sponser who owns project escalations

Business Owner

Articulates business goals. KPIs and use cases to be realized

Technical Owner

Understands the current architecture and allocates technical resources

Marketing Owner

Defines campaign requirements and owns downstream activation tools

- Use advanced analytics, such as machine learning and predictive modeling, to reveal patterns in customer behavior which then inform marketing strategies and better personalize customer experiences.
- Face challenges in synchronizing all systems to operate off a single customer record definition.

Marketing teams

- A key player in customer engagement and retention, leveraging insights from data warehouses and CDPs to tailor campaigns, personalize content, and enhance the customer journey.
- Face significant challenges in accessing and utilizing data directly for complex targeting efforts when marketing tools are isolated from data warehouses
- Must coordinate with data teams to extract sophisticated audience lists which can slow down campaign execution and reduce agility.
- CDPs help form customer profiles for marketers but often fall short for intricate targeting which requires further engineering support.

Teamwork makes the dreamwork

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Exec Project Sponser who owns project escalations

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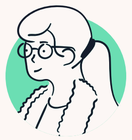


Technical Owner

Understands the current architecture and allocates technical resources

Marketing Owner

Defines campaign requirements and owns downstream activation tools

Product Managers

Translate core user flows and funnels into tracking plan events for a specific app or BU

Biz Intel Manager

Owns dashboarding and analytics of KPIs measured by the CDP

Web/Server Engineers

Instrument Tracking code; own QA and improvement over time

iOS/Android Engineers

Instrument App Tracking code; own QA and improvement over time

Data Scientists

Build/manage propensiy models which flow back into the CDP

Campaign Manager

Campaign setup and destination integration

Marketing Manager

Audience and trait building and maintenance

Uniting stakeholders to address use cases

Organizations must foster collaboration and communication among key stakeholders to leverage data warehouses and CDPs effectively. Here are a couple of strategies for uniting these teams:

Establish clear goals and objectives

1. Clearly articulate what success looks like, such as improved customer insights, enhanced marketing campaigns, or more personalized customer experiences.

2. Ensure all stakeholders–from engineering and data teams to marketing and executive leadership–are aligned and actively driving the objectives. Each party must understand their role and contribution to achieving the established goals.

3. Evaluate integration effectiveness by setting clear goals, which allows organizations to measure progress, identify areas for improvement, and make informed decisions about future data strategies.

4. Maximize benefits and foster a data-driven culture by using this approach, which enhances the integration of data warehouses and CDPs and promotes data-driven decision-making.

Read this: 3 Steps To Get Buy-In For Your Customer Data Platform Project

Encourage cross-functional collaboration

Creating opportunities for engineering, data, and marketing teams **to collaborate closely** on projects is crucial once goals are established. Foster a culture of data-driven decision-making, encouraging stakeholders to use insights from data warehouses and CDPs in their processes. This strategic approach leverages data for more informed projects and initiatives.

Ensure cross-functional meetings are outcome-focused and adept at overcoming blockers by setting clear objectives. Design sessions to drive collaboration and innovation, enabling team members with varied backgrounds to contribute their insights and skills towards specific goals and resolving challenges.

By forming cross-functional teams and defining specific use cases, companies ensure focused direction. Shared workspaces, physical or digital, enhance collaboration by providing platforms for continuous communication and idea exchange. This environment accelerates project development and breeds innovative solutions that siloed teams might miss.

By bringing together key stakeholders from engineering, data, and marketing, organizations can create a comprehensive approach to data management and customer focus, fostering innovation and growth. Collaboration, training, and continuous improvement help businesses deliver personalized experiences and build long-term customer loyalty, which is where the real excitement lies.

Chapter 05

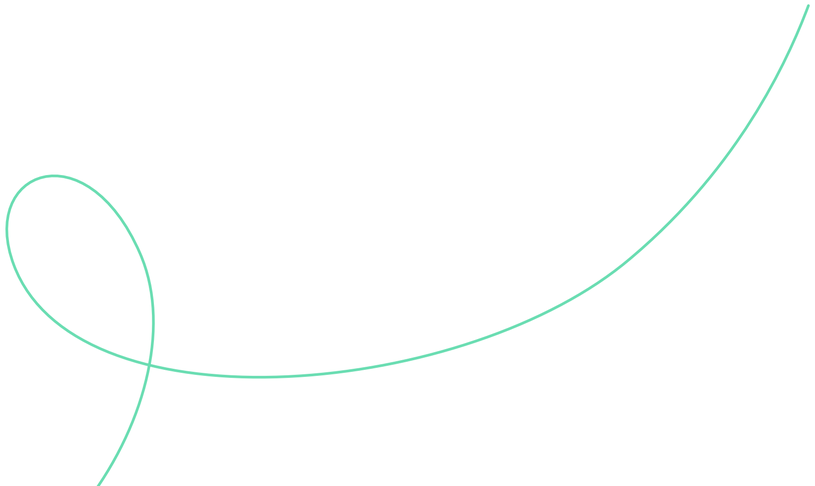
The 1-2 punch guide to unlocking use cases across DWs and CDPs

Now that we've established the foundational elements, it's time to discuss practical applications. Understanding how to leverage data from warehouses and CDPs for specific use cases is crucial for driving actionable insights and optimizing customer engagement. Here are four tips to get you started.

Identify key business objectives

The key is to work together without biting off more than you can chew. The end goal is that you may want to build an omnichannel marketing machine that is adaptive to every customer's needs, but we may be able to get a more incremental lift from setting our eyes on a single-channel or specific outcome.

What are the biggest areas of opportunity for the business? Is it reducing churn, **increasing lifetime value** (LTV), maximizing conversions on a particular channel, personalizing messaging to increase engagement, or understanding customer behavior to inform product development? Identifying these key objectives allows you to prioritize and focus your efforts effectively.



Use case examples

- **Return on ad spend:** Suppress converted users using real-time data from the CDP or time-out visitors after a set time frame of last seen on your website.
- **Increase monthly active users:** Personalize communication based on user preferences, subscription status, products purchased, previous visit behavior and more.
- **Cross-sell/Up-sell:** Target customers based on their previous buying behavior and/or use predictive traits to target customers based on their expected behavior to drive upsell or cross-sell of existing products and subscriptions.
- **Increase CSAT & Loyalty:** Use real-time behavioral traits to route users who contact support or sales and surface accurate historical information for a user to support and sales in their preferred tools.

Aligning business objectives with data capabilities

With data warehouses and CDPs at our disposal, we can segment customers based on various attributes such as demographics, behavior, preferences, purchase history, etc. Working together as a cross-collaborative team - determine who will be doing this activation and how you will get them access to the data they need. First, engineering needs to ensure the profiles are set up correctly before enriching them with data from the warehouse. From there, engineers can choose to send the audience data directly to a downstream channel **with Reverse ETL** or give technical marketers access to build the audiences themselves **with Linked Audiences** on top of the warehouse. It all depends on the skillset and needs of the business.

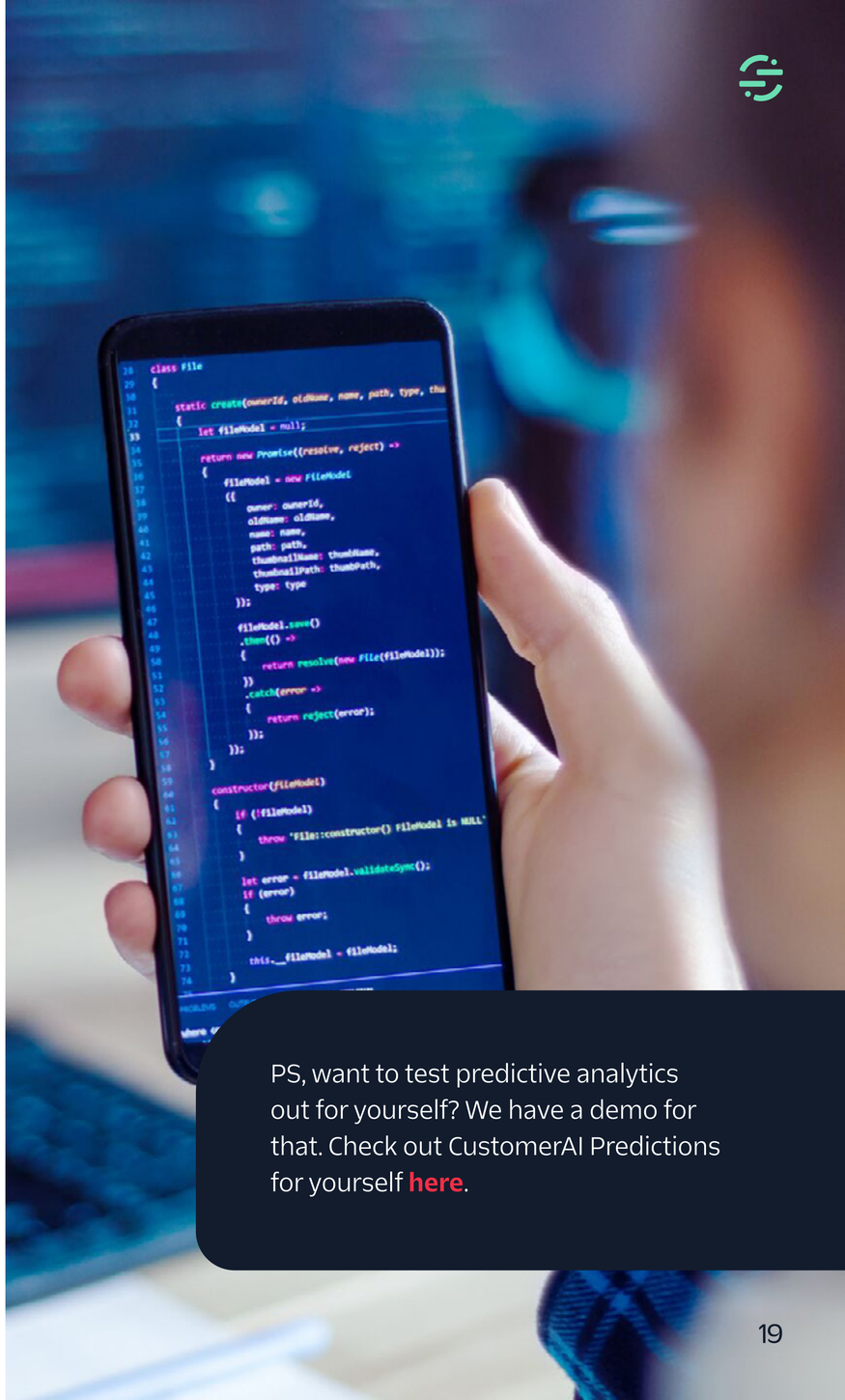
Utilizing data enables us to deliver personalized messaging that resonates with different groups of customers. For example, creating targeted email campaigns for customers who have recently purchased a certain product can help drive repeat purchases.

Continuous testing and optimization

Once you have identified your key objectives and targeted segments, it's essential to continuously test and optimize your efforts. This means experimenting with different messaging, channels, and strategies to see what works best for your customers. By constantly analyzing results and making data-driven decisions, you can learn more about your customers' preferences and behaviors, leading to better engagement and ultimately, higher conversions.

Advancing predicting behavior with AI

It would be remiss of us not to mention AI and use it as a tool to further your segmentation and personalization strategies. Many businesses are incorporating artificial intelligence (AI) and machine learning **into their segmentation strategy to take personalization to the next level**. Technologies like **Twilio Customer AI** can help make sense of large amounts of data and identify patterns and trends without the need for entire data engineering teams. This enables businesses to deliver highly personalized experiences at scale, increasing the effectiveness of their marketing efforts. For example, AI-powered product recommendations can be tailored to a customer's individual preferences based on past purchases or browsing history.



PS, want to test predictive analytics out for yourself? We have a demo for that. Check out CustomerAI Predictions for yourself **here**.

With great power, comes great responsibility

On their own, data warehouses and CDPs are excellent technologies for leveraging and storing customer data to create better personalization and customer experiences. But leveraging both together? Boom. Companies that use the convergence of both are stronger and more prepared to anticipate customer needs and deliver unparalleled adaptive customer experiences.

Now that’s a superhero strategy we can get behind. 💪

About Twilio Segment

Twilio Engage uniquely puts the power of a native customer data platform (CDP) and native omnichannel together in one solution so marketers can build data-first, personalized experiences that reduce costs and grow lifetime value.

Built “data up” on Twilio Segment’s CDP, Twilio Engage enables marketers to quickly activate real-time, first-party data across best-in-class integrated engagement channels as well as through 400+ partner channels from a unified solution without needing to rely on engineering resources–so you can go from idea to campaign in minutes. By providing a complete view of the customer and the ability to easily create and scale multi-step customer journeys across any digital channel, Twilio Engage helps marketers deliver more engaging and relevant customer experiences while driving long-term, efficient growth.

Recommended Reading

The Customer Data Maturity Playbook

A step-by-step guide to making the most of your customer data platform.

Download now>

6 Tactics to Enhance Your Data Strategy with AI

Learn how AI can enhance and improve every aspect of your customer data strategy, from collection and activation to journey orchestration and audience building.

Download the guide>

The Buy-In Blueprint: Unlocking Support for New Technology

Seven crucial ways to make cross-functional tech buying decisions easier and a win/win for both marketing and engineering teams.

Download the guide>

Today's leading companies trust Twilio's Customer Engagement Platform (CEP) to build direct, personalized relationships with their customers everywhere in the world. Twilio enables companies to use their communications and data to add intelligence and security to every step of the customer journey, from sales to marketing to growth, customer service and many more engagement use cases in a flexible, programmatic way. Across 180 countries, millions of developers and hundreds of thousands of businesses use Twilio to create magical experiences for their customers.
For more information about Twilio (NYSE: TWLO), visit: www.twilio.com.