SNOWPLOW

POWERING YOUR DATA JOURNEY

PRODUCT ANALYTICS FOR A COMPLEX USER JOURNEY

SNOWPLOWANALYTICS.COM

Why product analytics matters

Product development has come a long way since the days of focus groups and surveys. Today, more and more customer interactions with products and services are taking place online as an increasing number of digital products become available and products that were traditionally physical have turned digital.

But product analytics is still in its infancy and many companies are still finding their way when it comes to measuring how users interact with their products. This is largely because user journeys are becoming progressively more complex and harder to predict.

Digital products are commonly made up of multiple channels and platforms. As a result users rarely interact with them in a straight-forward, linear way. This makes it more challenging to follow and analyze patterns in user behavior that are essential to developing and optimizing the product. Companies that don't measure their user journeys and leverage behavioral insights, or are unable to do this well, will fall behind those that are working to constantly improve both the product and user experience, guided by behavioral data.

We have seen clear winners – disruptive companies that have become household names, such as Airbnb, Facebook and Spotify – rely on data to drive continual product development which keeps them at the top of their game in extremely competitive markets. These companies have pioneered an approach to leveraging data that helps them understand how customers are using their products and informs the next steps in product development.

Companies striving to deliver world-class digital products should follow in the footsteps of the disruptors and recognize product analytics as a critical component of success. Product teams need to deliver and leverage the right behavioral data to enable persistent optimization of the user experience across the product lifecycle. This entails building a robust data capability around the user journey that allows them to take full ownership of their behavioral data in a way that packaged analytics tools simply do not provide.

> "Every employee should be empowered to make data informed decisions"
>
> **Jeff Feng,** PM Lead for Data at Airbnb[1]

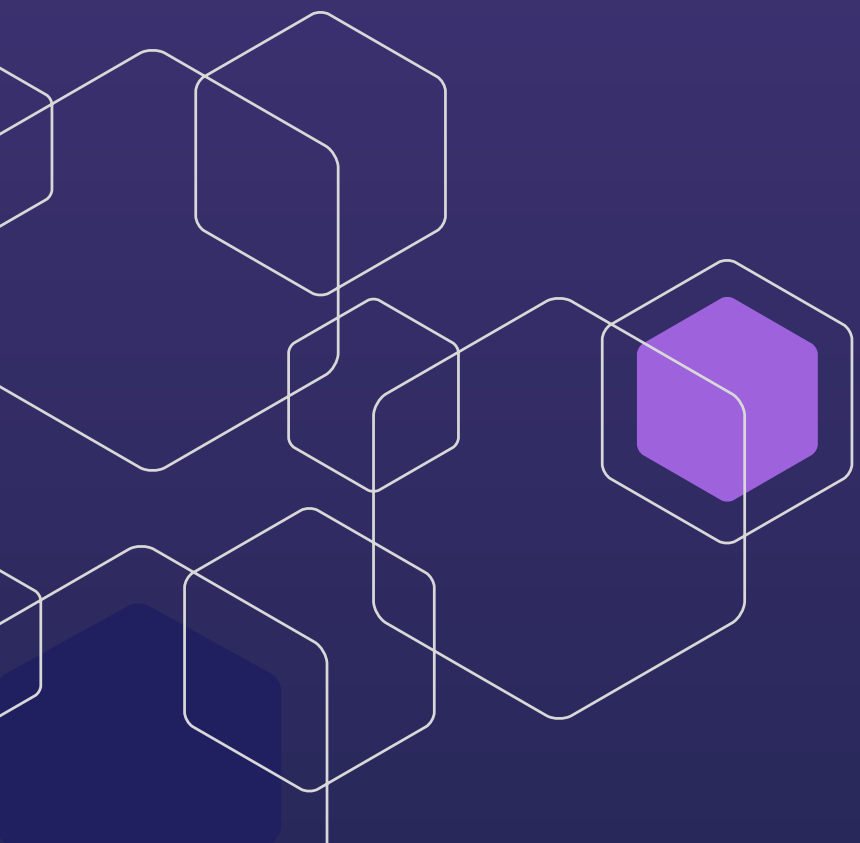
1 https://medium.com/airbnb-engineering/how-airbnb-democratizes-data-science-with-data-university-3eccc71e073a

Product analytics at a glance

Product teams need a clear picture of how users are interacting with their products to enable meaningful product development.

This requires behavioral data to be captured across user sessions, covering an expansive range of actions including (but not limited to) scroll depth, time spent at each stage of the user journey as well as every interaction (clicks, swipes, etc.).

Behavioral data is essential to informing decisions and experiments that are key to agile and iterative modern product development – a highly disciplined approach to improving products that we touch on in a **separate eBook**. These decisions and experiments can be crucial to unlocking greater potential in products and enhancing the user experience overall. The art of surfacing useful insights to drive decision making is increasingly becoming a collaborative effort between product teams and analysts or other data professionals. Product teams in pioneering companies such as Strava, the exercise tracking app, take a proactive approach by enlisting dedicated analysts as part of the team to model and deliver data in a way that fits the company's needs.



The world of product analytics today

McKinsey states that striving for excellence in product analytics matters. It found over 85% of companies that use customer analytics extensively say it contributes significant value[2]. Today there is a diverse and often overwhelming variety of product analytics tools available for product teams to choose from.

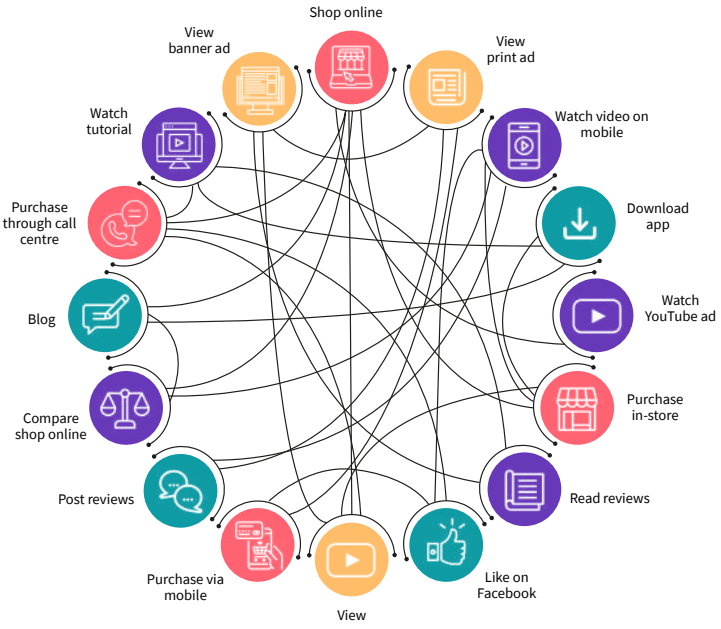
Some of the packaged analytics tools most widely used today such as Heap, Amplitude and Mixpanel are specifically engineered to power product analytics. These are powerful tools that enable companies to generate insights quickly and are particularly well-suited to product teams who want to capture data with minimal fuss or implementation time.

But the flexibility to unlock granular data across all platforms and the freedom to decide exactly what to do with that data becomes a greater requirement as companies mature and must focus on how they differentiate. As a result, control and flexibility are becoming increasingly important elements in the tools companies consider implementing.

Many packaged analytics tools prioritize ease of use over the ability to model data from multiple touchpoints across complex customer journeys. And while plenty of thought is put into how product teams interact with the packaged tool's dashboard, freedom to deliver and use the data in a way that fits around an organization's business objective is less of a consideration. These limitations are particularly restrictive when it comes to understanding complex and unusual user journeys – the type of journeys that are becoming part of the new normal in our digital world.

Product teams need to be able to pull data together from across siloed channels, such as the website, product user interface (UI), customer service platforms and more – and they need the ability to make their own rules for how the data is processed, instead of having those rules decided for them.

A typical user journey

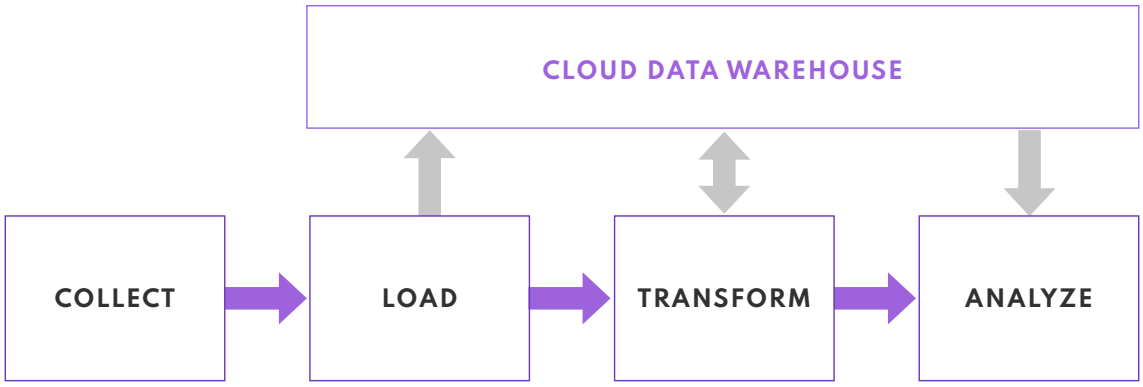


2 www.mckinsey.com/business-functions/marketing-and-sales/our-insights/why-customer-analytics-matter

How to tackle product analytics for your complex user journey

Developing a world-class product requires a data capability that is tailored to your product's unique characteristics and its user journey.

This will empower you with the flexibility to explore your data and use it in unlimited ways which packaged analytics tools simply cannot match. This requires breaking out of packaged tools to build your own data stack – a combination of best-in-breed tools and infrastructure to capture, model and deliver your data.



With this in place, you'll not only be in full control of product analytics, but well placed to power multiple use cases from your behavioral data set. Building a strategic data capability around the product and the complex user journey allows the product team to deliver, manage and analyze data in a way that works for them. A key benefit of this is being able to break down silos that arise when, say marketing and product teams capture data in isolation from each other. Instead, you have one single source of behavioral data that multiple teams across the business can work with to further the growth of the whole organization.

When each team uses separate tools, such as product analytics tools in the product team and marketing analytics tools in the marketing team, each team will have their own siloed ideas of user behavior based on their own criteria and use cases. Each team will be tracking the same users in a different way and building a separate data set based on their behavior.

This siloed approach creates friction with different teams working from different data sets. At best this can cause confusion when stakeholders turn up to the same meeting with different numbers. At worst, it is the user who is impacted by bad experiences or receiving the wrong information.

By building one single source of data, everybody across the business gets the same insights. This drives a cohesive understanding of product analytics across every team, enabling greater collaboration and joined-up decision making.

But it's not just about providing one shared behavioral data set across the business. Other business-critical back-end data sources, such as CRM or sales data, can be linked to the stack and combined with behavioral data to give a full picture of the user on an individual level. This integrated data pool is essential to creating a holistic view of complex end-to-end user journeys.

Packaged analytics tools usually prescribe their own logic to how user journeys are tracked, which is restrictive to understanding how users are interacting with a unique product. By assembling a data stack that fits their needs, organizations can set their own custom logic for tracking user journeys built around their product, ensuring the data delivered is useful and relevant to their product specifically. For example, a media app might put in measures to ensure it can track 'time spent on page' accurately, while a subscription business may be much more interested in tracking user acquisition metrics such as user signups.

Building your own data stack means the organization owns its data and can use it in different ways for multiple use cases. This goes beyond simply reporting and extends to other benefits including customer personalization, recommendation engines and fraud detection. In some cases, ownership and control of behavioral data can eventually become a product feature in itself – such as when Spotify[3] surfaces data to its users about their favorite songs for the year.

A growing number of privacy restrictions is another reason why organizations should consider taking ownership of their data and data infrastructure. By setting first-party, server-side tracking, companies can ensure they capture a complete behavioral data set without losing out to web browser restrictions or ad-blockers.

Most importantly, creating a data stack gives product teams the greatest level of control over their data, ensuring the quality, accuracy and completeness required to drive smarter decision making that is key to product development.

3 https://newsroom.spotify.com/2020-12-01/6-new-features-to-unwrap-in-your-spotify-2020-wrapped/

An introduction to building a best-in-class data stack

The best approach to freeing your organization from the restraints of data silos is to adopt a modular data stack. This entails using a variety of best-in-class data tools at each phase of the data lifecycle.

This cloud-based modular approach is commonly known as a modern data stack because it's a step forward from using on-premise monolithic legacy technologies. The modern data stack also uses one data warehouse, empowering stakeholders across the organization to work from the same data from a single source instead of different teams using siloed data that has been collected, processed and visualized using different tools with varying results.

It's essential to capture data from touchpoints across every one of your platforms and channels including behavioral data from your websites, mobile apps, IoT devices and servers, along with customer data from your CRM. You'll also want to capture data from any ad platforms and transactional databases your organization uses. It's best to begin with a narrowed focus, establishing what your key sources are and what you want to track. You can gradually expand your sources and what you're tracking as your attribution models mature.

Take complete ownership of product analytics with Snowplow

More and more companies are identifying the need to be in complete control of their behavioral data set, without being limited by third party tools. Snowplow is the behavioral data delivery platform that empowers organizations to rise above the difficulties of data delivery and organization, allowing them to maximize the value of their behavioral data.

By taking control of their data and data infrastructure, companies can empower their product teams to leverage a rich behavioral data set. Their possibilities are opened up for (but not limited to):

- Mapping their end-to-end user journey across all channels and touchpoints
- Cohort analysis to improve understanding of different segments of users, e.g. pre and post-signup
- Precise A/B tests and experiments to trial new features or functionalities
- Powering personalization and recommendation engines that enhance the user experience
- Informing decision making to shape the product roadmap

Designed to help companies capture and operationalize behavioral data at scale, Snowplow gives organizations total ownership of data and data infrastructure. With Snowplow, data teams can deliver rich, quality data that analysts can begin working with instantly. Most importantly, Snowplow gives businesses the freedom to control the structure of their data in a way that makes sense for them and the assurance that it meets their unique business requirements.

Companies using Snowplow aren't limited by the type of one-size-fits-all approach that is often found to be restrictive in packaged analytics tools, or boxed into a UI. Snowplow enables data delivery, processing and modelling without forcing users to conform to a UI that doesn't fit their needs. The data can instead be fed into a business intelligence (BI) tool that will provide greater levels of flexibility, such as Looker or Tableau.

How Animoto optimizes the customer journey with Snowplow

Animoto is a cloud-based video creation platform that lets users generate video slideshows and customized web-based presentations. Since its inception, Animoto has looked for ways to understand its users and how they engage with the product.

Animoto set three core challenges:

1. Understanding the full user journey
2. Analyzing the performance of new product features
3. Optimizing spend via multi-touch, multi-channel attribution

With Snowplow, Animoto were able to:

Move from siloed to complete data

Going for a one-stop-shop approach using Snowplow, Animoto was able to collect complete, unsiloed online, mobile and other data in a single place, simplifying tooling and joining disconnected data sources to gain previously unavailable insight.

Craft custom data models

Animoto relied on the completeness, flexibility and customizability of Snowplow data to help create data models that work specifically for what they want to track and attribute.

Gain flexibility to self-define data structures

Snowplow enabled cross-platform, cross-device tracking, with flexible, self-defined data structures and business logic, allowing for custom stitching and reconstructing user journeys, proprietary attribution modelling and advanced testing models.

Create proprietary data models

Snowplow helped Animoto address challenges, such as data completeness and universal tracking, to develop their own custom data models to understand the end-to-end user journey and how users interact with products.

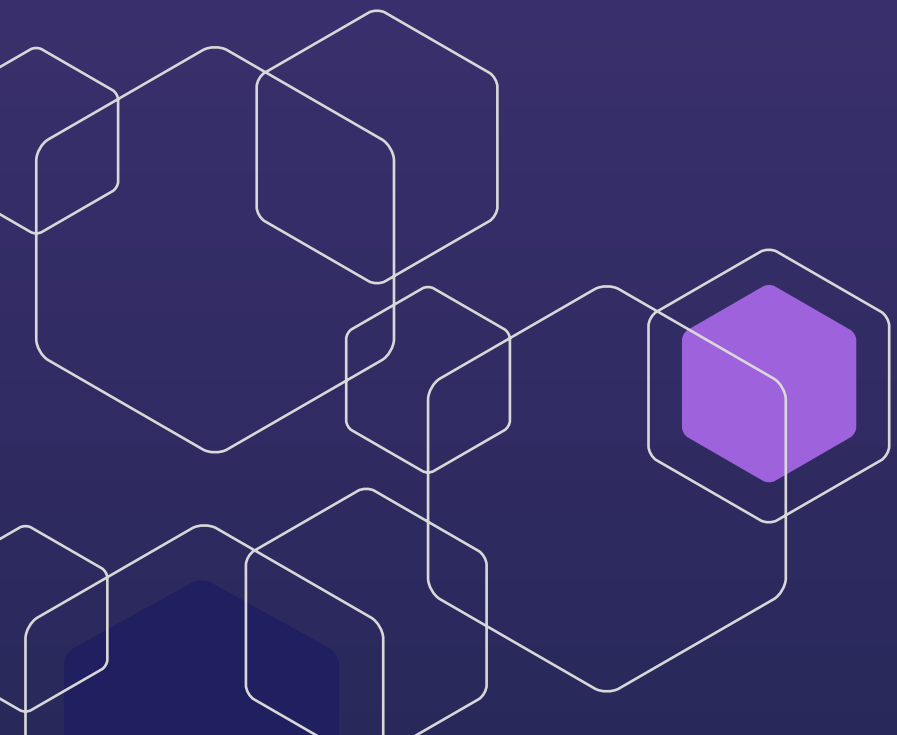
Sign-up journey: Built to understand what users are doing prior to registration to calculate metrics, such as visit-to-registration conversion rate, and ultimately optimize the acquisition funnel. This is usually a complex model because of the difficulty of connecting users across time and devices, but Snowplow data makes it easy.

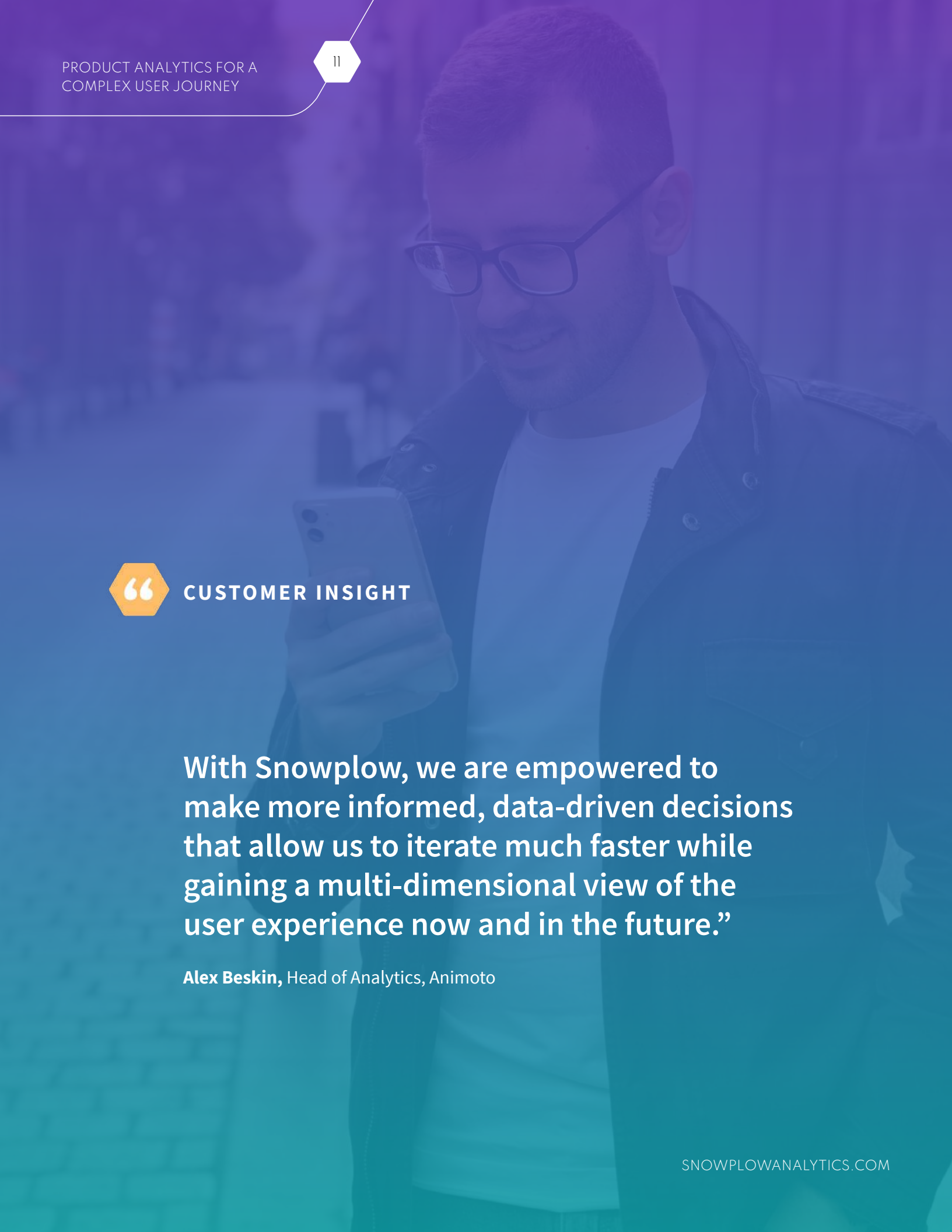
Milestones model: Built to stitch together each user's sessions to understand the customer experience post-registration, i.e. how users interact with product features and how these actions drive conversions.

Develop accurate attribution

Recognizing that data "tells a story" that underpins growing, scaling and optimizing a business, Animoto wanted a model that could more accurately attribute orders to their specific marketing channels to ensure that they optimize ad spend in the right places. Animoto was able to get more accurate attribution from multi-touch and non-standard user journeys.

Multi-touch attribution: Built to be able to attribute orders to various touchpoints. To get this right, the ability to set and apply their own business logic was important. By being able to implement their own logic, Animoto can connect all touches for each user, which they can use to attribute to the various sources from which users visit their website.





CUSTOMER INSIGHT

With Snowplow, we are empowered to make more informed, data-driven decisions that allow us to iterate much faster while gaining a multi-dimensional view of the user experience now and in the future."

Alex Beskin, Head of Analytics, Animoto

How Gousto boosted growth with Snowplow

Gousto is a UK-based meal delivery service that takes the stress out of grocery shopping and meal planning. The company was growing rapidly and needed powerful, advanced analytics that provided highly detailed data to identify and act on their most effective drivers of growth.

Gousto's growth depended on three things:

1. Maximizing return on ad spend
2. Relentlessly improving retention
3. Delivering delicious meals conveniently

With Snowplow, Gousto were able to:

Maximize return on ad spend thanks to accurate analytics

To measure the return on each campaign across multiple channels including Facebook, Instagram, Twitter and Google Analytics, Gousto needs to know how long each of the customers acquired on that campaign stay subscribed.

Gousto needed data detailed enough to be easily segmented by marketing channel and campaign. Snowplow provided a rich, detailed data stream for each user, showing:

- Which campaign on which platform the user engaged with
- When they subsequently signed up
- Exactly how they browse Gousto's recipe selection each week
- How many boxes they get delivered
- How long they remain a subscriber

This made it straightforward for Gousto to aggregate the data to calculate the real return on each campaign and use that data to optimize their spending across all campaigns and channels.

Systematically improve retention with a data-informed approach

Gousto's data science team built a model that predicted how likely each user is to retain into the near future, assigning that user a retention score and then running A/B tests to see which initiatives had the biggest impact on each user's likelihood to retain in the most cost effective way.

The data science team moved to a deep learning model that could process a lot more data without expensive feature engineering. The deep learning model could also understand all the rich data that Gousto collected with Snowplow from the different sources that contribute to figuring out a user's likelihood to retain:

- Web behavior
- Mobile app usage
- Engagement with email
- Transactional history
- Customer service conversations in Zendesk

Using data to surprise and delight subscribers with personalized recipes

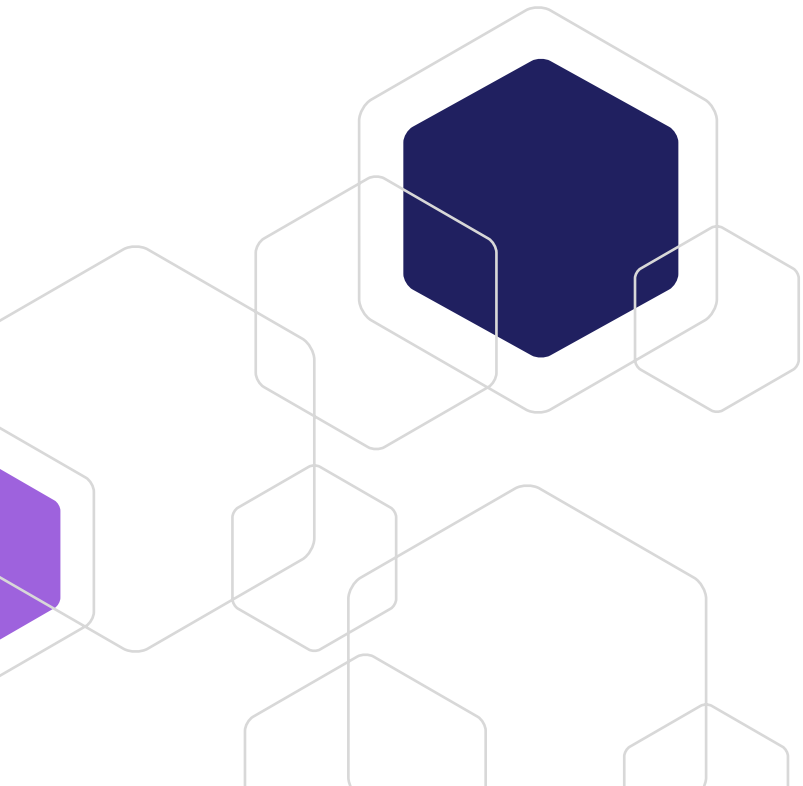
Two things were important for all of Gousto's subscribers:

- Having delicious recipes that keep them excited about using the service
- The convenience of recipe recommendations to reduce browsing through multiple recipes

Reducing selection makes choosing recipes easier but risks not showing users meals they like; conversely, giving people more selection means they have more meals they're excited about to choose from, but the experience is less convenient.

Personalization solves this tension: because Gousto can be confident they know which recipes a user will like, they can improve the experience by showing the user fewer choices.

Gousto's personalization efforts were powered by a combination of behavioral data from Snowplow and a graph database of their individual recipes built using Neo4j. Feeding the algorithm a combination of recipe data plus the rich data from Snowplow about how users engage with each recipe prior to actually making their selections was critical and ensured subscribers who like chicken don't end up with ten different chicken dishes to choose from, and get just the right amount of variety each week.



CUSTOMER INSIGHT

Without Snowplow data, this would not be possible at all. We tried to do this with transactional data, but that doesn't give you enough information. Really looking into customer activity is what actually gives you predictive information."

Dejan Petelin, Head of Data, Gousto

Start taking full control of your data

Complex user journeys contain the information to inform smarter decision making that has the power to set products apart from their competition.

Incrementally, those smarter decisions can be essential to your success in the long term. Unlocking that data and using it in the way that makes sense for your business is the challenge so many products teams are facing, yet so many existing technologies don't provide that level of freedom.

In any leading organization the product team needs to have complete ownership of their data and control over how they choose to use it. They need flexible tools that can connect all the multiple touchpoints across the user journey. This is essential to informing product development and arming every team with the right data to gain a competitive edge.

Product and data teams that recognize the significance of managing the delivery, modeling and warehousing of data across all their platforms and products can depend on Snowplow to deliver the freedom and control they need. Snowplow is built around the mantra 'your data, your rules' to deliver high-quality data that you can rely on.

Get in touch to learn more about how Snowplow can put you in full control of your data.

snowplowanalytics.com