How to Increase Revenue by Measuring Customer Behavior

HEAP

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INTRODUCTION

Since 1993, the Internet has seen several significant evolutions in the way web traffic is measured. Analytics has changed rapidly from its humble beginnings as hit counters for web pages, to server log events, manual event tagging, and now to fully automated technology that tracks the entire customer journey.

Today, the industry is multiplying and is projected to be worth over $3 billion by 2019. Meanwhile, 50% of brands say they still don't have the tools they need.

The numbers speak for themselves: analytics will continue to become an indispensable tool for brands and businesses.

To get a full understanding of the potential that analytics can unlock, we need to understand how we got here.

CHAPTER 2

The History of Innovations in Web Analytics

The First Innovation

1993 – Log file data

The 90's were a simpler time. Websites were "web pages" and everything was static. These web pages didn't require much effort to track, so the hit counter was all that was needed. Anytime a web page element was requested or loaded it was called a "hit," a very crude metric for recording page visits.

In the very beginning, a basic understanding of web page activity could be grasped by reading and interpreting server log file data. Server log files kept a record of HTTP request information with attributes such as the source IP address, timestamp, the request type, status, and bytes transferred. But the problem with this data is that it required technical skills to access and interpret. Analog was the first free log file analysis tool which made log file data more understandable to the average user. Only premium analytics solutions like Business Objects helped users understand the insights from these technical sources, and they were out of the price range for anyone but enterprise businesses.

Around this time, web page counters were popularized, with the most popular being HitWebCounter. These counters gave you a basic idea of your product and company's health but zero visibility into what your users are doing.

Then came Analog, the world's first free log file interpreter, which paved the way for the analytics industry.

[1] https://www.marketsandmarkets.com/PressReleases/web-analytics.asp

The Second Innovation

1997 – Manual tagging and the pageview paradigm

Next came manual tagging. The web wasn't dynamic just yet, so the page you loaded was the page you would be interacting with. This was perfect for manual tagging. There weren't many elements on the page, pages were not complex, and when you tagged your website or product, nothing else needed to change unless you redesigned your interface.

During this period, Omniture was founded (1996), and Urchin was acquired by Google to become Google Analytics (2005). Both products allowed for the creation of dashboards, reports, and calculated metrics.

You now had visibility into things like pageviews, sessions, and other things that today we would consider to be fundamental web metrics. You could even filter by date ranges. All of this gave you a basic understanding of your company's health.

However, you still had very little visibility into what your users and cohorts of users were doing. On top of that, tags were a pain to implement manually, and as the web became more dynamic, manual tagging became more painful to maintain. Implementation became a sore point for most medium to large businesses because of the constant need to add, remove, and fix tags. This lead to the development of a cottage industry of implementation consultants who worked alongside businesses to plan, implement, and maintain their analytics platforms.

The Third Innovation

2008 – A user-centric view

By now more complicated questions like, *"What was our drop off between step 4 and step 5 of our 6-part funnel, and how can we improve that?"* were being asked. The greater needs of this period allowed data-driven, growth-focused companies to flourish and gave rise to an entire industry of conversion rate optimizers (CROs), funnel hackers, and growth marketers.

The people with these jobs were the primary drivers in the shift from session-based web analytics tools like Google Analytics or Adobe Analytics to user-centric web analytics tools. These new web analytics providers still require manual tagging, but fancier visualizations were added to make things more human readable. Tools like KISSmetrics, Mixpanel, and Amplitude let you see what your users are doing and develop hypotheses about why they are behaving a certain way. Analytics also became more approachable for the non-technical marketer and business teams due to better visualizations. Using these tools, you could create funnels and cohorts to monitor users throughout their lifecycle. It even worked for mobile web and native iOS and Android.

Beyond visualizations, the most promising improvement in analytics during this period was the ability to dive deep into customer behaviors. This user-centric approach was fundamentally different than the previous web analytics tools. Now marketers, analysts, and product managers can understand what their users were doing and why.

Even with these massive strides in the web analytics space, all the legacy tools mentioned are still built on early 90's, static web architecture: manual tagging. The most significant pain point is implementation, tagging, and continued maintenance of event tagging.

These tools have significant pain points around creating tracking plans, implementation, and continued maintenance of event tagging. And if you want to do serious data analysis in a BI tool, many experience major difficulties with the underlying data including inconvenient schemas, missing data, and having to munge data.

The Fourth Innovation

2013 - now – Automatic data capture and retroactive analytics

All of the web analytics tools mentioned so far are built on the philosophy of tagging events. Tag managers help with this problem, but they're only a band-aid on a fundamentally outdated philosophy when it comes to web data collection and data infrastructure. These tools are rooted in the mindset that web data collection and analytics needs to have implementation and tagging as the first step. This antiquated philosophy no longer holds true.

Today's web environment is much different. It is no longer a static page with very few interactive elements. It's dynamic, with the rise of A/B testing and experimentation to personalization. Web analytics tools based on event tagging encounter limitations in today's dynamic environment.

With the 4th innovation in web analytics, technology is leveraged to capture all web data for you automatically. Technology also organizes all the data for you in a visualization layer, freeing you from tedious tagging and allowing you to spend time slicing and visualizing it any way you need. Often, the answers to the questions we ask lead us to new questions. If you need data on something you didn't think to tag six months ago, technology should have that available retroactively at your fingertips.

Technology should enable you to have access to any click, swipe, tap, form change, or other events that occur on your site or app. This technology should free you from spending time tagging events, and instead spend time finding insights and business-critical data points.

Using Heap's Event Visualizer, you can click and define events without engineering or technical assistance, allowing you to retroactively look at data for any event and satisfy your on-the-fly curiosity.

This innovation causes a massive shift in thinking. It's like planning out a research report to type it on a typewriter versus typing it in a word processor. Considering everything that Heap collects, it's exciting to think about all the impactful predictive models you and your team now have time and bandwidth to build.

Below we show some real-world examples of companies that have made the transition from older-generation web analytics tools to the innovations available in the present day.

CHAPTER 3

Successful Examples of Technology Adoption

SUCCESSFUL EXAMPLES OF TECHNOLOGY ADOPTION

Overview

Many businesses today are still stuck in a pageview paradigm. They are not looking at a user-centric view of their data. These businesses are making decisions based on aggregate, high-level metrics like pageviews and bounce rate that come from legacy analytics tools.

Despite feeling like they are data-driven, basing decision-making on these types of metrics is fundamentally flawed. These businesses have little or no visibility into the behavior of individual users, including repeat users and buyers. They have no idea how their customers interact across different platforms (website, mobile, in-product, etc.).

Having a user-centric view from your analytics tools provides the understanding needed to build a customer journey that makes sense, and tackle things like optimizing conversion rates across key touchpoints.

A user-centric view is not enough, though. Businesses need to ensure they are not bogged down by manually tagging events, fixing broken tracking, and managing massive tracking plans and expensive implementation processes. These are all things that can now be accomplished by technology, leaving humans to focus on the most impactful things: driving better experiences through the customer journey and optimizing conversion rates.

Here are some great examples of businesses that have moved away from legacy analytics tools and into the modern era.

SUCCESSFUL EXAMPLES OF TECHNOLOGY ADOPTION

20%

increase in their checkout conversion rate

A Leading Direct-to-Consumer Online Mattress Company

Before to turning to Heap, the largest online direct-to-consumer mattress company had sparse and brittle event measurement in place. Growth efforts had been focused solely on increasing customer volume rather than optimizing the customer journey.

At first, their data team turned to tools like Google Analytics, but they recognized that manually implementing tagging was too resource intensive, which made it impossible to get data and answer questions quickly.

Time and time again, when someone wanted to understand particular user behavior, the data team was forced to respond with, "*sorry, we don't measure that*."

They realized this was a problem and switched to an analytics tool built for the modern web environment. Since the e-commerce company started using Heap in 2015, **they've increased their checkout conversion rate by 20% for key audience segments**.

"We used to find ourselves having to de-prioritize analytics or even put deployments entirely on hold to make sure analytics were set up prior to launch. With Heap, we make no sacrifices when it comes to the robustness of our data."

MICHELLE BALLEN,
SENIOR DATA & ANALYTICS MANAGER

SUCCESSFUL EXAMPLES OF TECHNOLOGY ADOPTION

theSkimm

4X

growth in daily conversions

theSkimm had worked with both Mixpanel and KISSMetrics, but the team found that no other tool matched the ease of use offered by Heap. The company didn't want to be boxed in by web analytics products built on outdated technology. According to the company's Growth Lead Ryan Stuczynski, *"Heap's flexibility made the decision a no-brainer for us as we get a retroactive view of our world."*

Over the past two years using Heap, theSkimm has grown at a rapid pace without having to worry about having the proper events tagged ahead of time. Since they are utilizing a web analytics tool built for today's dynamic Internet, they have all the data available to analyze their growth.

Using Heap, the team at theSkimm was able to test several hypotheses based on newly labeling events in the visualization layer and analyzing their retroactive data.

The most exciting discovery for the team was that users would use the Recent Skimms feature before subscribing. This was not something they had to worry about tagging ahead of time because they would always have data for it with Heap's automatic data capture. Discovering this allowed the team to expand the functionality and centrality of the feature which lead to **4X growth in daily conversions**.

"The key benefit was the ability to understand impact immediately. We cut down the feedback loop to nothing."

RYAN STUCZYNSKI,
GROWTH LEAD AT THESKIMM

SUCCESSFUL EXAMPLES OF TECHNOLOGY ADOPTION

Sur la table

6%

increase in conversions

Before to switching over to Heap, the e-commerce growth team at Sur La Table used a combination of Adobe Analytics and Google Analytics. It allowed them to have a high-level understanding of their users, but it didn't provide any information on why users behaved the way they do.

Moreover, whenever the team rolled out new landing pages or made iterative changes to the purchase funnel, they needed to wait for engineering to implement new tags in Adobe Analytics.

"Our developers sat with the Heap solutions team and got it right away. It was a totally different approach."

WALTER EUYANG,
SUR LA TABLE'S E-COMMERCE AND MARKETING ANALYST

The back and forth between growth and engineering slowed the growth team's process down massively, leading them to seek out a solution like Heap. *"Our developers sat with the Heap solutions team and got it right away."* said Walter Euyang, Sur La Table's e-commerce and marketing analyst.

Using Heap's event visualizer and retroactive data allowed the team at Sur La Table to move faster and perform ad-hoc analysis. These tools enabled the e-commerce team to discover their first win–they found that the more product pages a user viewed, the more likely they were to convert.

With these new insights—only available to the team from Heap—Sur La Table made the necessary changes within their product and newsletter that lead to a 12% increase in total views and a **6% increase in conversions**.

CHAPTER 4

A Look at the Industry Benchmarks

Overview

To give you a better sense of what your conversion rates should be, let's take a look at some data we've compiled from numerous sources. While it's true that conversion rates will vary widely depending on your target customer, your product, and your industry, it's always good to know average industry benchmarks.

A LOOK AT THE
INDUSTRY BENCHMARKS

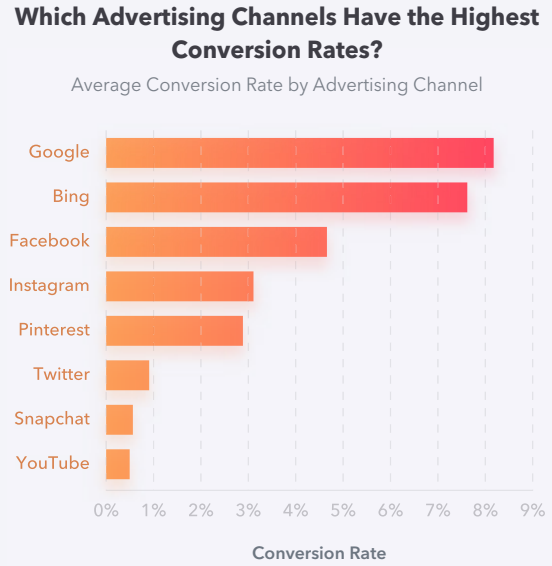
E-Commerce

Conversion Rate

The average conversion rate across e-commerce companies is 3.63%. This information was gathered using anonymized data across 25 leading e-commerce companies.

Conversion Rates by Channel

Traditional search providers have the highest overall conversion rate at an average of 7.9% while Twitter, Snapchat, and YouTube average 0.66%.



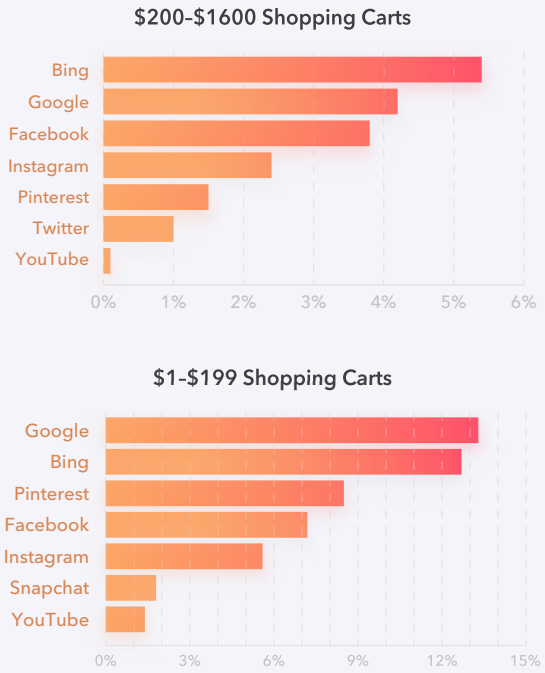
How Shopping Cart Size Affects Conversion

Not surprisingly, your shopping cart size has a tremendous impact on your conversion rate.

If your shopping cart size is $200 or over, your conversion rate will become a fraction of what it was at the $1 - $199 price range.

How Does Shopping Cart Size Affect Conversion Rates?

Websites Ranked by Conversion Rates for Different Shopping Cart Sizes



SaaS

Conversion Rate

With SaaS (Software-as-a-Service) freemium providers, two inflection points matter for top of the funnel acquisition.

1. Signups
2. Trial to paid

Signups

Looking at anonymized data from 79 SaaS companies over a three month period, we're able to see that the average signup conversion rate is 36.2%[2].

Trial to Paid

Generally the best SaaS companies with opt-in free trials see a free trial to paid conversion rate of more than 25%. If yours is less than 25%[3], you probably should work on optimizing for conversions.

Distribution of Signup Form Conversion Rates

[2] https://heapanalytics.com/blog/data-stories/good-conversion-rate-signup-flow

[3] https://sixteenventures.com/saas-free-trial-benchmarks

A LOOK AT THE
INDUSTRY BENCHMARKS

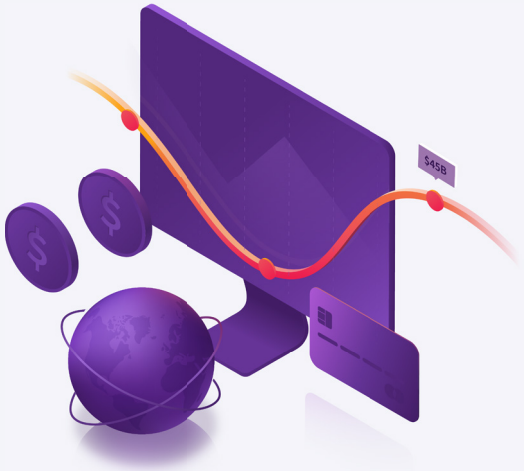
Financial Services

Conversion Rate for AdWords

In the consumer finance space, conversion rates tend to be around 5% when it comes to generating AdWords leads[4].

Conversion Rate for Applications

The most important metrics to consumer finance companies like online lenders are application submissions. For most, this hovers around 35%.



[4] https://www.wordstream.com/blog/ws/2014/03/17/what-is-a-good-conversion-rate

CHAPTER 5

Developing Your Data-Driven Strategy

Asking the Right Questions

"We're conditioned by incumbents to want these big metrics like page summary. But those big metrics, they're not actionable. Specific questions are the things that create value, which is why we want to spend as little time as possible on these high-level, feel-good numbers and more time tackling specific things that create value day-to-day."

ALAN D'SOUZA,
DIRECTOR OF PRODUCT ANALYTICS AT LENDING CLUB

Putting yourself in your users' shoes to understand their behavior is a difficult task. But it's critical because it will give you an understanding of the journey your customer takes.

You need to shift your mindset based on who the user is and the product or device they're interacting with.

Avoiding Vanity Metrics

Often teams want to present large metrics that aren't actionable. As an example, dashboards of things like pageviews and other high-level summaries that purport to show the health of the business. They look good and they feel data-driven, but they're too high level and ultimately do not provide a good picture of the health of the company. Vanity metrics are easy to get distracted by, but they do not speak to business impact. You want to get more granular, and closer to the things that matter like user behavior.

Instead, ask questions like "*what user journey leads to increased revenue or increased lifetime value?*"

For example, if your user registration conversion rate is 30%, dig deeper to see how your customers are moving through this part of the journey. They may be getting stuck in a particular area. This could be due to confusion, a technical bug, or another reason. If your users are getting confused, think about how changing the copy or adding visuals can alleviate this confusion. This is something that is particularly easy to test and improve.

DEVELOPING YOUR
DATA-DRIVEN STRATEGY

Build a Data-Driven Culture

Technical and team challenges make it hard for analytics to be genuinely self-serviced. To do that, you need a mindset shift in your company culture. Let data drive actions and back every hypothesis with credible research. The best examples of building a data driven company culture that we've seen with our partners stems from top-down initiatives.

"Individuals and managers use data differently. The operational people want a dashboard that has ten different filterable parameters that they can slice and dice to get what they want. You should be going to your CEO and recommending a certain decision, not giving her raw data to synthesize."

HARRY TANNENBAUM,
DIRECTOR OF ECOMMERCE AND BUSINESS ANALYTICS AT NEST

DEVELOPING YOUR DATA-DRIVEN STRATEGY

In fact, think about how you can get your team thinking in terms of user behavior—the numbers on the screen are people, and people have patterns.

To start, look at how the most successful technology companies are building out growth teams. Facebook and Uber use a framework called The Independent Model[5]. The Independent Model hierarchy enables organizations to build strong team DNA around speed and iteration.

With the Independent Model each team consists of a VP of Growth who reports directly to the CEO, while a group of product managers, engineers, designers, and data scientists work on optimizing every step of the user funnel.

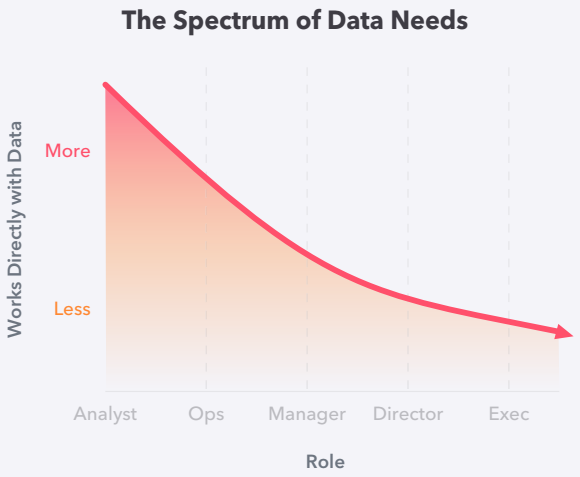
We understand that you probably won't be able to reorganize your business overnight. It's still worthwhile understanding a successful model so that you can make minor changes to build a hybrid, structure next quarter's team goals in a different format, or otherwise keep the essence of a successful structure.

[5] https://medium.com/swlh/how-do-you-choose-the-best-growth-team-model-632ad5a85be9

Remember That Data Usage is Relative

Look at the Spectrum of Data Needs

The higher the role, the less the person works directly with data. The further on the left you are, the more you're going to be engaged with the actual tools and datasets used to develop insights. As you move further to the right, the more strategic your decision making will be, given the data.



Needs	Flexibility to slice and dice data	→	Information around performance
Format	Well-structured data, cubes in BI tools	→	Recommendations, i.e. "Yes, X is doing well because..."

CHAPTER 6

How to Execute a Data-Driven Strategy

Plan Goals and Requirements Around User Behavior

Earlier in this ebook, we presented three examples of companies that have used user behavior to increase revenue. As you start to develop your own strategy to increase revenue, you'll need to plan your goals around user behavior.

The tools are available–modern data and web analytics tools give you insight into what your users are doing.

"Since implementing Heap, we no longer have to worry about tracking and feasibility, but instead can focus on which analysis we can complete next. The more sophisticated our data needs get, the more powerful Heap gets."

AMANDA ROSENBERG,
HEAD OF ANALYTICS AT THIRDLOVE

Develop Your User Personas

Personas are general descriptions for the segments of customers or users that will be purchasing or using your product. When developing these personas, think about the following questions:

1. What industry does your customer work in?
2. What is your customer's job title? Role? Responsibility?
3. What are their incentives? What makes them successful at work?
4. Why are they using your product? What are their goals?
5. Who do they report to?
6. What do they care about? What do they not care about?
7. What is their biggest challenge? How does your product solve it?

Understand Your AARRR Metrics

AARRR stands for Acquisition, Activation, Retention, Revenue, and Referral.

Measure and Map Your User Journey Into a Funnel

Once you have your personas, think about how each one will behave as they're moving through your product. Using analytics, strategize and create the funnels and cohorts that will let you measure your user funnel and look for areas where there is a significant drop-off. What industry does your customer work in?

Analyze Bottlenecks

Once you've found areas with significant drop-off, think about your users' behavior during this step of the funnel. Also think about what behaviors might be positively correlated with higher conversion. For example, if viewing a sizing chart is indicative of being more likely to buy that product, the sizing chart should be easy to find and use.

Then develop micro-funnels for each step of the user journey to analyze what your users are doing. Think about the following:

1. What steps are users interacting with your product that could be causing a drop-off?
2. What are the events you can create to measure these steps?
3. How would your micro user funnel look?

Create a Hypothesis

Based on your analysis of your customer behavior, develop a root cause hypothesis. Remember, you're not looking to improve vanity metrics–think more specific and actionable.

For example, you might notice that all products that are jackets have low conversion rates. Our hypothesis is that the sizing chart is broken for some users with a specific device. If we make it easier to find and use the sizing chart for those users, it will result in X% increase in conversion for all jackets.

At this point, you probably have a running list of hypotheses and possible experiments you want to try. Prioritize them using the ICE framework or a simple impact/effort scoring, and run the most straightforward experiments that will get you results.

For deciding which experiments to run first, use the ICE framework: Give every idea an "ICE" score from 1 to 10. ICE stands for impact, confidence, and ease:

Give Every Idea an "ICE" Score From 1 to 10

ICE stands for impact, confidence, and ease.

At the end, remember to review every experiment, both successful and unsuccessful. Often marketers overlook unsuccessful experiments, but it's the failures that will help you uncover insights that could lead to revenue multipliers.

Experiments to Run

Deciding on the experiments to run and the order in which to run them is perhaps the most challenging part of a well thought out plan. After successfully completing your implementation and analysis, you're left with dozens of hypotheses to run experiments for. Any one of these could increase your revenue. But what are some common experiments that marketers run?

We've put together a list of some common experiments you should consider at each step of your user journey to improve revenue. Although you can run the experiments on this list, we recommend that you use this list as a way to develop ideas for experiments that are tailored to your users' journey and behaviors.

Top of the Funnel

Acquisition: Decrease Facebook acquisition costs.
If we create a Facebook custom audience using our most valuable customers, we can create a Lookalike audience that will convert at lower costs.

Acquisition: Decrease Adwords acquisition costs.
If we look at our top channel that brings in the most paying users, we can target similar users for acquisition by creating a Similar Audience in Google Adwords that will convert at a lower CPA.

Acquisition: Increase signup for free trials (SaaS).
If we remove the need to enter credit card information to start a free trial, it will increase our conversion rate by X%.

"For the first time ever we had a complete picture of our entire user journey. Automatic data capture meant we no longer had gaps in our understanding of our users in terms of acquisition."

ARVIND RAMESH,
DATA SCIENTIST AT ENVOY

Middle of the Funnel

Increase add-to-cart rate.
If we add a side menu with items from product display pages that a user has previously viewed, the add-to-cart rate will increase by X%.

Increase cart size.
If we recommend complimentary items that are on sale when users are viewing their cart, we will increase cart sizes by $X.

Increase click through rate to product display pages.
Customers that view five or more product display pages are twice as likely to make a purchase. If we highlight hot products on our listings page, this will increase our click through rate to product display pages by X%.

Activation: Increase activation rate for free trials (SaaS).
Because the majority of active users have done X at least Y times, if we encourage users to do X during onboarding, it will result in a Z% lift in activations.

Activation: Increase activation rate for free trials (SaaS).
If we send an email to users on days 3, 7, 10, and 14 of the free trial, they will convert to paying users at X% higher rate.

"By understanding the behavior of our users, we were able to put together a meaningful definition of what activation means for new users. From that, we increased our activation KPI from 30% to 74%."

VIKAS TIWARI, ANALYTICS MANAGER AT QUANTCAST[6]

[6] Disclaimer: Quantcast is not a customer of Heap.

- Top of the Funnel
- Middle of the Funnel
- Lower Funnel
- Post-Funnel

Lower Funnel

Revenue: Increase purchase rate.
80% of our traffic comes from mobile, but only 12% of our sales come from mobile. If we make the "Buy Now" button above the fold on a mobile phone, our purchase rate will increase by X%.

Revenue: Decrease cart abandon rate.
If we switch to a single page checkout process, we will decrease cart abandon rate by X%.

"The team at Sur La Table found that driving people to category pages led to a 12% increase in total views of product pages as well as a 6% increase overall in conversion rate."

WALTER EUYANG,
E-COMMERCE ANALYTICS AT SUR LA TABLE

Post-Funnel

Revenue: Decrease item return rate.
If we make the size chart easier to find and use on our product display pages, it will decrease item return rates by X%.

Retention: Increase returning customer rate.
If we build segments of users that are interested in different products based on their purchase history, and then build separate email campaigns about related or complementary products, we can increase the lifetime value of those cohorts by $X.

Retention: Increase post-checkout add-on item purchase rate.
After a user makes a purchase, if we offer them a small discount in their receipt email for their next purchase, we will get X% more customers to make an additional purchase.

"We've started to match product behavioral product usage against Salesforce fields, which is really useful for both the product and the sales teams."

BRIAN WHALLEY,
DIRECTOR OF PRODUCT MANAGEMENT AT KLAVIYO

HEAP

Heap automatically captures every customer touchpoint and automates away the pain of data. Other analytics tools require you to tag events upfront and manually instrument tracking code. Instead, Heap automatically captures everything: clicks, taps, swipes, form changes, and more. Get answers in seconds and make decisions faster.

Behavioral Segmentation

Complete history on every user. Don't miss out on unknown unknowns. Automatically capture every event and easily build segments based on behavior.

Unified Customer Identity

One person means one user in Heap. Unify a customer across mobile, desktop, email marketing, and more.

Retroactive Funnels

Dynamically change your funnel events and go back in time with data that's available retroactively. Discover where users drop off, and compare how cohorts convert.

Clean Schema

Most data teams spend up to 80% of their time cleaning and organizing the data. Our structured user-event schema remains constant through naming convention changes and event combinations, which means less time organizing and more time gathering insights.

To learn more about Heap's data and analytics solutions, contact **sales@heapanalytics.com** or call **+1.415.938.9398**.


HEAP