The Amplitude Guide to Product Metrics





In This Guide

03	Key Takeaways		15	Retention Metrics	
03	What Are Product Metrics?			15	Retention rate
	04	Leading vs. Lagging Indicators		16 18	Churn rate Customer lifetime value (CLV)
05	Product Metrics Categories		19	Mon	etization Metrics
06	Product Metrics Cheat Sheet			19	Monthly recurring revenue (MRR)
07	Acquisition Metrics O7 Number of new signups			19	Net revenue retention (NRR)
	07	and/or qualified leads		20	Average revenue
	80	Customer Acquisition Cost (CAC)	21	Nort	per user (ARPU) th Star Metric
80	Activation Metrics 21				
	08	Activation rate	21	The Importance of Product Metrics The Challenge of Choosing the Right Product Metrics	
	10	Time to activate	22		
	11	Free-to-paid conversions	22		
12	Enga	agement Metrics	22	Which Product Metrics Should You Not Focus On? Empower Your Business with Insight into Product Analytics	
	12	Monthly active users (MAU), weekly active users (WAU), and daily active users (DAU)	23		
	13	Stickiness (DAU/MAU)			
	14	Feature usage			

This guide will help you hone in on the best metrics for tracking user acquisition, activation, engagement, retention, and monetization. We'll show you what those metrics are, what they mean, how to calculate them, and why they matter.

Key Takeaways

- Product metrics can be organized into five standard categories: acquisition, activation, engagement, retention, and monetization.
- The right product metrics let you form a hypothesis, adjust variables to test that idea, then measure the results.
- Common challenges with selecting
 product metrics include determining
 the right data to track, what actions to take based on that data, and how you're performing against benchmarks.
- You should track a mix of leading and lagging indicators to better predict future performance.
- · Avoid vanity metrics that don't provide insight or indicate opportunities for action.

What Are Product Metrics?

Product metrics are indicators that show how users interact with a product. They are derived from measurements and often have a numeric component of time, ratio, rate, etc. For example, your activation rate measures how well your efforts are increasing the number of new active users. Feature usage helps you track how a customer uses a given feature, which can provide insight into what part of your product provides the most value or is a critical action in the customer journey. And tracking whether users are repeatedly coming back to your product helps you understand whether your business is growing sustainably.

Product metrics give you information on how to improve your product. Tracking product metrics as part of a controlled experiment before and after you make changes tells you whether or not those changes worked. This process of measuring, experimenting, and assessing is how you progressively iterate your product.



It's important to note that simply tracking metrics will not explain the "why" behind any changes. For this reason, be sure to dig deeper into understanding the customer behaviors and product experiences that impact your key metrics.

Product metrics are used to drive product decisions about:

- · Pricing
- · Pay model
- · Feature mix
- · Onboarding flows
- · User interface
- · Ideal customers
- Messaging

For example, you could A/B test different pricing and pay models and measure the success of each experiment with activation rates. Track feature usage to see what features your average user finds most useful compared to your power users and decide what features to prioritize or remove in your next update. Find out if your onboarding flows are performing as well as you'd like by measuring the time it takes to activate your users.

Leading vs. Lagging Indicators

Every product metric tells a story about where your business is headed or where it's already been. These are called leading indicators and lagging indicators, and a business needs both to understand how it is performing.

The metrics you use as your leading and lagging indicators depend on your product goals. For example, if your goal is to increase the number of new subscribers to your product, you might use the number of new signups as your leading indicator. If you increase the number of signups, you are hypothesizing that the number of new subscribers will increase in the future.

Leading indicators should drive your daily tactics. They should be something you can measure frequently and easily because you'll need to hypothesize, test, measure, and frequently readjust as you work to improve them.

Lagging indicators, then, are about measuring whether your actions were successful. You might use annual recurring revenue as a lagging indicator for your goal of gaining new subscribers.

Lagging indicators are based on a long-term strategy. It's important to know that changes you make today may not show up as improvements in your lagging indicator until much later.

Product Metrics Categories

Product metrics show you how users are interacting with your product. Your team can use these metrics to better understand what users find helpful, what keeps users coming back, and the best way to take users on a successful journey to becoming loyal customers. Tracking these metrics helps you monitor your business so you can make informed adjustments and continue to grow your business.

These metrics can be split into five categories: acquisition, activation, engagement, retention, and monetization. The acquisition through retention categories represent the general user lifecycle through the product, whereas monetization can overlap with several stages in the customer lifecycle.

- Acquisition metrics, like the number of new signups and qualified leads, measure when someone first starts
 using your product or service. They're great for understanding what marketing channels are working best for
 your company.
- Activation metrics, like activation rate and time to activate, show you how well you are moving users from acquisition through that critical "aha" moment where they discover why your product is valuable to them and, in turn, provide value to your business.
- Engagement metrics, like monthly active users and feature usage, measure how (and how often) users interact with your product. Those interactions might include sharing a song or editing their profile. Users who engage with your product are considered active users. Increasing the number of daily, weekly, and monthly active users is important for company growth—but only if you measure them right.
- Retention metrics, like retention rate, free-to-paid conversions, and churn rate, gauge how many of your users return to your product over a certain period of time. These are critical metrics for your company's growth. It doesn't matter how fast you fill the top of your funnel if users are leaking out the bottom just as fast.
- Monetization metrics, like net revenue retention, monthly recurring revenue, and average revenue per user, capture how well your business is turning engagement into revenue.

Product Metrics Cheat Sheet

Each category of product metrics tells a different story, but they all tell an important one. Here's a cheat sheet of metrics you should be tracking to monitor the health of your products.

CATEGORY	METRIC		
Acquisition	Number of new signups and/or qualified leads		
	Customer acquisition cost (CAC)		
Activation	Activation rate		
	Time to activate		
	Free-to-paid conversions		
Engagement	Monthly, weekly, and/or daily active users (MAU, WAU, DAU)		
	Stickiness (DAU/MAU)		
	Feature usage		
Retention	Retention rate		
	Churn rate		
	Customer lifetime value (CLV)		
Monetization	Net revenue retention (NRR)		
	Monthly recurring revenue (MRR)		
	Average revenue per user (ARPU)		
North Star	North Star Metric		

Acquisition Metrics

Number of new signups and/or qualified leads

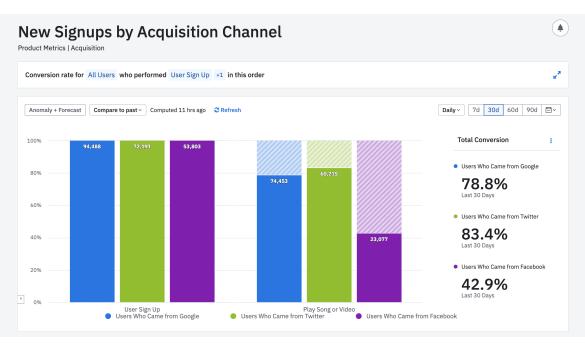
Definition: This is a measure of high-intent users who are more likely to convert to customers.

How to measure: Instrument each event so your product analytics tool can count signups or other events your team defines as a qualified lead, such as providing a business email.

Note: In product analytics, an event is any distinct action a user can take in your product (start game, add to cart) or any activity associated with a user (in-app notifications, push notifications).

Why to measure: Many product teams measure downloads to track whether their marketing efforts are leading to acquisitions. However, you should use a metric that demonstrates a higher commitment level from your users. That way, your team can focus on high-intent users instead of people who may just delete the app without ever trying it.

With just a few clicks, a product analytics tool like Amplitude will help you track the conversion rate of people who download your app and then go on to sign up. You can even go a step further and identify which marketing channels lead to the highest conversion rates and focus more dollars on that channel. Or you can tweak your messaging on an underperforming channel and test different landing pages to increase conversions.



In this Amplitude Funnel Analysis chart, 83.4% of users who came from Twitter played a song after signing up. Try exploring any of the charts shared throughout this guide by using Amplitude's self-service demo, then navigating to the Product Metrics dashboard.

In this chart, you can see that even though Google drove more people to sign up for the product, Twitter was more effective at turning those signups into engaged users. The right product analytics software makes it easy to go beyond vanity metrics to identify your most effective acquisition channels.

Customer Acquisition Cost (CAC)

Customer acquisition cost measures how much your company spends to turn somebody into a customer. Those costs include things like marketing, advertising, and sales. The lower your customer acquisition costs, the less expensive it is for a business to scale.

Calculate this amount by dividing the total amount invested in acquisition channels by the number of customers gained over the same time period.

CAC =
Total acquisition costs / Number of acquisitions

Activation Metrics

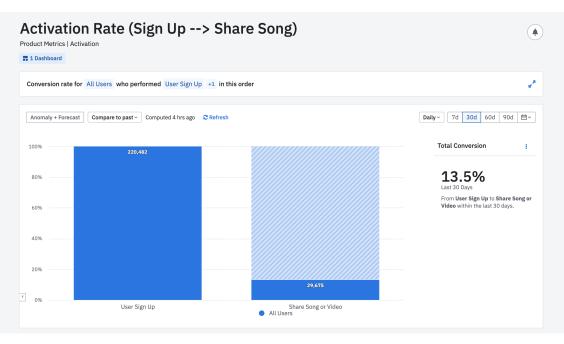
Activation rate

Definition: Activation rate is the rate at which users find their "aha" moment. This indicates that the customer has oriented themselves with the product and what it can offer them. Depending on the product, this activation rate may also signal when the user starts delivering business value back to your company.

How to measure: Divide the number of people who complete your milestone activation event by the number of users who signed up to use your product. That onboarding milestone can be any event that makes it more likely someone becomes an active user of your product—sharing songs, adding friends, or even defeating their first boss.

Activation Rate = Users who trigger activation rate / All users

If 100 people sign up on your app, and 35 of those people share a song during onboarding, your activation rate for that onboarding event is 35 percent.



In this Amplitude Funnel Analysis chart, the activation rate for users who sign up and share a song is 13.5%.

Why to measure: Use this information to determine the most effective onboarding flow for users. Maybe requesting a product demo proves to be a better indication that a user will become a customer. Then you could choose to reorganize your onboarding process, so users are encouraged to check out a product demo when they first start using your app.

Amplitude helps Instacart deliver a 10% increase in activation

<u>Instacart</u> boosted their activation metric—measuring when a customer makes their first order—by 10 percent. The company tested different landing page designs and sign up flows with Amplitude's A/B testing tools.

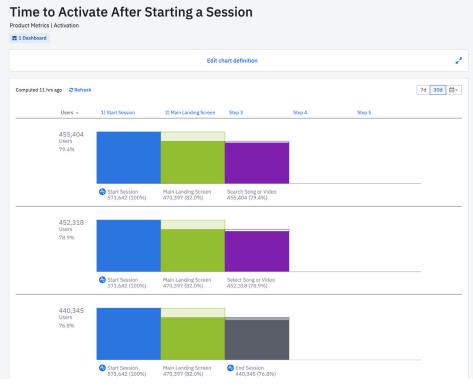
Time to activate

Definition: Time to activate is how long it takes to move users through the onboarding flow from acquisition to activation.

How to measure: Amplitude's path analysis can show you which steps users take, and when, on their journey from acquisition to activation.

Why to measure: When you measure your activation rate, you will see that not everybody goes straight from acquisition to activation. The longer it takes to activate your users, the longer you have to wait to generate revenue. And, likely, the lower your activation rate will be, too.

Users don't always follow the journey you expect from the acquisition event to the activation event of paying for your product. You can use a Journeys, Pathfinder, or Pathfinder Users chart to see what those users are doing instead.



In this Amplitude Pathfinder Users chart, 79.4% of users followed the path of starting a session, viewing the main landing screen, then searching for a song.

This screenshot of the Pathfinder Users chart demonstrates how Amplitude helps you sort through the most common paths users take on their journey through your product. You can influence a user's path by experimenting with different user interfaces or adding notifications at key touchpoints along the journey and measuring their effect on users.

For example, users may share a high score with their friends or collect points for an item upgrade. You can analyze the time to convert in Amplitude, then consider the different paths your users are taking and what incentives could move them to activate faster.

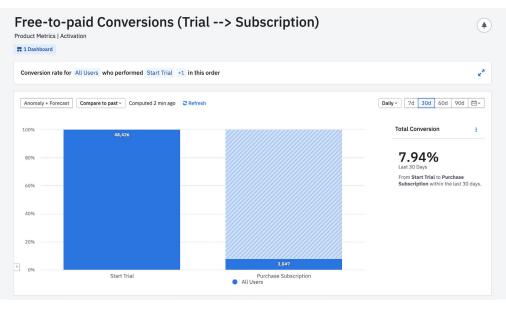
Free-to-paid conversions

Definition: This is a measure of how many users convert from free trials to paid subscriptions.

How to measure: To measure the rate of free-to-paid conversions, divide the number of people who converted from a free trial to a paid subscription by the total number of free trial users.

For example, if you have 100 free trial users and 15 of them become paid subscribers, you have a free-to-paid conversion rate of 15 percent. You can also use a product analytics tool like Amplitude to measure this conversion rate with a Funnel Analysis chart.

Free-to-paid conversion rate = Paid customers / Free trial users



In this Amplitude Funnel Analysis chart, the free-to-paid conversion rate is 7.94%.

Why to measure: A free trial or freemium app model can help acquire new users, but a company that can't convert those free users into paid customers won't last long. Measuring the rate at which you convert those free users to paid customers helps you ensure your business is moving in the right direction.

Le Monde expands subscriber base by half with Amplitude

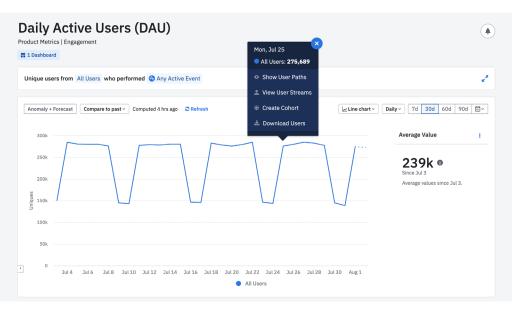
Newspaper <u>Le Monde</u> redesigned their front page using insights gained via Amplitude's <u>Event Segmentation chart</u>. Now, the site suggests the most popular subscriber-only articles to online readers to entice them to subscribe. Using this strategy, Le Monde increased their reader-to-subscriber conversion rate by 46 percent.

Engagement Metrics

Monthly active users (MAU), weekly active users (WAU), and daily active users (DAU)

Definition: Each of these terms refers to the number of active users logging in on a monthly, weekly, or daily basis. The way each company defines active users is different. For example, simply opening an app isn't a great measure of an active user. You want to measure an action that shows people are using your app and getting value from it. This is known as a critical event. For a gaming app, that might mean completing a level or gaining experience points.

How to measure: Use a product analytics tool to tag your defined critical event and measure the number of unique users who fire that event each month.



In this Amplitude Event Segmentation chart, there were 275k daily active users on July 25.

Why to measure: By measuring what percentage of your users are coming back daily, weekly, or monthly and then checking out what features they are using most, you can hone in on the core value of your app.

Dave 2x's monthly active users with Amplitude

Mobile banking app <u>Dave</u> used Amplitude to derive insights about product usage, and then make data-driven decisions that created more effective retention loops. The result? The product team at Dave 2x'd monthly active users and increased retention by 5.7x.

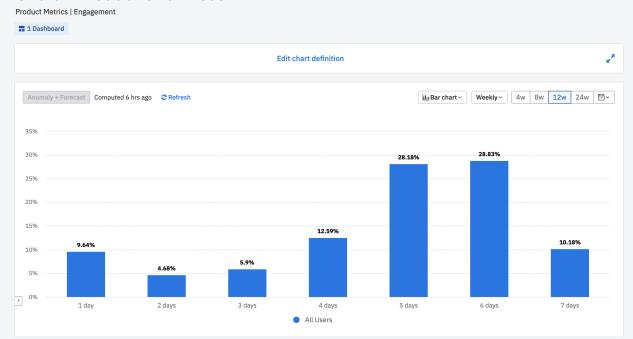
Stickiness (DAU/MAU)

Definition: Stickiness shows how often your users are coming back each month.

How to measure: Divide your daily active users by your monthly active users (or another metric of time, like weekly active users) to find your "stickiness" rate. If you have a stickiness rate of 50 percent, for example, that shows your users come back on 15 out of 30 days each month.

Stickiness = Daily active users / Monthly active users

Overall Product Stickiness



In this Amplitude Stickiness chart, 12.59% of users were active on exactly four days in a week. You can also look at stickiness for specific features.

Why to measure: If your business model relies on daily active users, this will be an important ratio to track. You can follow a rolling average of this metric to see which direction this number is trending.

Some businesses, like online grocery stores, may be less worried about daily user retention and instead focus on weekly user retention or even longer time periods. In those cases, you would measure stickiness by dividing your weekly active users who return monthly.

To know which calculation is best for your business, determine your product usage interval: the frequency (daily, weekly, monthly, etc.) with which you expect people to use your product.

Feature usage

High and Low Feature Usage

Product Metrics | Engagament

■ 1 Dashboard

Definition: Feature usage describes how often users engage with each feature of your product. It may also describe the depth of that engagement.

How to measure: To get a sense of which features to invest in and which to drop, build a feature matrix of your most and least used features using Amplitude. The features in the lower left are rarely used and only by a few people. They are easy candidates to drop in future updates, unless they are events that should happen infrequently, like signing up for the product. Features in the top right are frequently used by many people. Again, it's easy to see these are features to continue investing in and improving.

If you look at the top left corner of your matrix, you'll find features that are heavily used by fewer users. These may be things that your "power users" appreciate about your product. With some tweaking, you may be able to find ways to introduce these features to a wider set of customers and make your product even more valuable to them.

You can also take a specific feature and see how it relates to your monthly, weekly, or daily active user rates. For example, you could calculate the percentage of monthly active users using X feature to see how important that feature is to your users.

In this Amplitude Engagement Matrix chart, 80% of users favorite a song an average of 30 times. The favorite song feature is a good candidate for continued investment.

%MAU

Purchase Ticket



Why to measure: Determining what features users engage with and how often helps product managers decide where users are getting value from a product. Conversely, features that aren't getting much use may need to be reworked, promoted differently, or dropped.

Use a product analytics tool like Amplitude to measure feature usage in all sorts of contexts. Compare the percentage of feature users to total users to learn how much of your community enjoys the feature. See how often a cohort uses a feature, then check if that cohort of users is more likely to be retained or make purchases. If so, it's worth experimenting with ways to encourage others to use that feature. It's also worthwhile to look for correlations with that usage. For instance, perhaps people who use feature X also use feature Y.

Explore the charts shared throughout this guide by using <u>Amplitude's self-service</u> <u>demo</u>, then navigating to the <u>Product Metrics dashboard</u>. Or see all of these product metrics in action with your own data by <u>getting started with Amplitude</u>.

Retention Metrics

Retention rate

Definition: Retention rate measures how often your users are coming back to engage with your product.

How to measure: Retention rate can be measured in three ways:

- 1. **N-Day Retention:** This method is used to see how many of your users came back on a certain day. This is especially useful if you are the product manager for a social or gaming app and trying to develop a daily habit for your users.
- 2. **Bracketed Retention:** Use this to create a series of custom intervals. For example, you can measure retention for days 0-7, days 0-14, and days 0-21. Users who come back during any of those three time periods are considered retained. This approach may be more useful for a budgeting or grocery shopping app where the emphasis is on creating a regular rhythm, but not necessarily a daily habit.
- 3. **Unbounded Retention:** For product managers of apps that may be used infrequently, like a travel app, unbounded retention is the best method. You can measure users who returned on a certain day and any day after that. This figure is basically the opposite of your churn rate.

Each of these measurements can be used to measure how well you are retaining customers, users, or specific cohorts of your users.

Retention Rate for Users Who Favorite Songs



In this Amplitude Retention Analysis chart, users who favorite one or more songs have higher weekly retention than those who do not.

Why to measure: A high retention rate shows your users are active, and your product provides enough value to keep them coming back. Retaining your existing users is vital for business growth. You can't grow if you lose customers as fast as you acquire them.

Churn rate

Definition: Churn rate is the inverse of your retention rate. It is a measure of how many users stopped returning to your product.

How to measure: Calculate your churn rate by dividing your total number of active users at the end of the month by the total number of active users at the beginning of the month. You can also calculate churn by week or year, depending on which interval is of interest.

Churn rate =

Total active users at end of time period / Total active users at start of time period

Churn Rate by User Plan Level



In this Amplitude Retention Analysis chart, 96.13% of users who are on the free plan have churned by day 30.

Why to measure: Product analytics tools like Amplitude let you perform a churn analysis to find out where users are dropping out, so you know what step in your process or feature set in your product to try improving first.

Once you have your churn rate, you can dive deeper to see how those churn rates differ across devices, geography or any other demographic you are interested in. This analysis may reveal that certain types of users account for higher churn than others. Now, you have a place to focus your efforts for better results.

Calm uses Amplitude to identify churn and problem areas

Meditation app <u>Calm</u> used <u>churn rate cohort analysis</u> to identify a step in their onboarding flow that was leading to high customer churn. They used Amplitude cohorts to dig into what types of users were churning at that step and realized that users in Brazil, China, and India were churning at a much higher rate than users in the United States. Now, they had information to form, test, and assess a hypothesis that there was potentially a translation issue during that step.

Customer lifetime value (CLV)

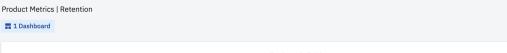
Definition: Customer lifetime value is the value of a customer across their entire relationship with your company. Lifelong, frequent customers provide more value to a business than one-time customers.

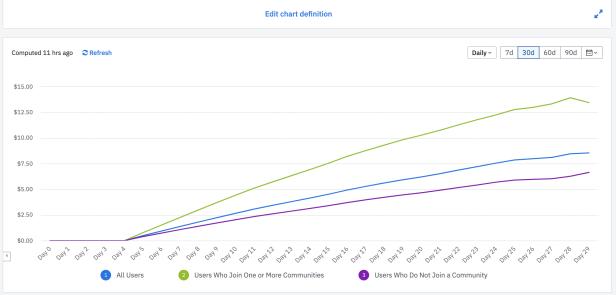
How to measure: To calculate how much you can earn from the average customer before they churn, multiply the average purchase frequency of a customer by the average value of a purchase. That figure is your customer value. To get customer lifetime value, multiply customer value by the average customer lifespan.

Customer value = Average purchase frequency X Average value of purchase

Customer lifetime value = Customer value X Average customer lifespan

Customer Lifetime Value (CLV) for Users Who Join Communities





In this Ampitude Revenue LTV chart, users who join one or more communities have higher customer lifetime value than those who do not.

Why to measure: Understanding which customers drive the most value for your business will help you prioritize where to invest your resources to improve the product. If your high-value customers love a certain feature, then it benefits your product team to continue improving that feature over something that's used less, or only matters to users who don't provide as much value.

Monetization Metrics

Monthly recurring revenue (MRR)

Definition: Monthly recurring revenue measures your predictable, regularly recurring revenue each month.

How to measure: In some B2B models, subscriptions are on an annual contract. In those cases, companies may prefer to use annual recurring revenue (ARR). Regardless, the calculation is the same. Multiply your number of subscribers by your average monthly revenue per user.

Monthly recurring revenue = Subscribers X Average monthly revenue per user

Why to measure: Monthly recurring revenue (MRR) is an important metric to help businesses build more accurate budgets. By understanding what revenue is expected to repeat every month—like subscriptions or contracts—compared to one-time revenue from things like special projects, you can plan better for the future.

Net revenue retention (NRR)

Definition: Like user retention, net revenue retention is the revenue you retain over a given period. It's usually measured monthly.

How to measure: Calculate your net revenue retention by taking your monthly recurring revenue at the end of the month and dividing it by your monthly recurring revenue from the beginning of the month. You can do this for any period of time, like quarterly or annually.

For example, if you start July with \$45,000 in monthly recurring revenue, then you complete some upsells to existing customers and end July with \$55,000 in monthly recurring revenue, your net revenue retention is 122 percent.

NRR = MRR at end of time period / MRR at beginning of time period

Why to measure: Net revenue retention is important because it measures how well you are holding on to your existing customer base. If your net revenue retention rate is growing, so is your business.

Average revenue per user (ARPU)

Definition: Average revenue per user is the revenue your company generates per user.

Average Revenue Per User (ARPU) by User Behavior

How to measure: If you generate revenue solely through subscriptions that have only one price, you already know this number, and it's probably not going to change often. Otherwise, divide your revenue over a given timeframe by the number of users you had over that same timeframe to determine average revenue per user.

ARPU = Monthly revenue / Monthly active users

Product Metrics | Monetization # 1 Dashboard Edit chart definition Computed 7 min ago Refresh Monthly 3m 6m 12m = \$12,500 \$10k \$7,500

In this Amplitude Revenue LTV chart, users who view one or more reviews have higher average revenue per user than those who favorite one or more items.

Users Who Favorite One or More Items

Why to measure: Calculating average revenue per user lets you see how much value the average user brings to your business.

Average revenue per user can provide a benchmark for making certain product decisions.

For example, as you make changes to your product, they will affect each segment of your customer base differently. Those effects can be good for some customers, which will encourage them to use your product more. Other customers may dislike your changes and use your product less. If the users who dislike the changes bring in less revenue for your company, but the users who are happy with the changes spend more with your company, that change may be worth it.

\$2,500

\$0.00

Month 0

North Star Metric

Definition: A North Star Metric is a leading indicator you can track to determine whether you are meeting your product goals and delivering value to your customers. It is sometimes the most important metric your company tracks, because it helps assess whether your product and customer experience are on track with the long-term company vision.

How to measure: How you measure your North Star Metric will depend upon the metric your team sets as the North Star. To determine your product's North Star Metric, run through this North Star statement exercise and use Amplitude's North Star Playbook to:

- Assess your metric against the North Star checklist
- · Run a North Star workshop
- · Troubleshoot common issues

Why to measure: One key product metric can accelerate business goals and the company vision.

For example, Facebook's North Star Metric was measuring how many new users added seven friends in 10 days. That's because those users were most likely to find value in their platform and become retained customers. Keep in mind that the Facebook team didn't determine this North Star Metric until after they dug into customer behavior and surfaced this key insight.

At Amplitude, our North Star Metric is a Weekly Learning User (WLU): a user who is active and shares a learning that is consumed by at least 2 other people in the previous 7 days.

The Importance of Product Metrics

Product metrics tell you how users are (or aren't) engaging with your products. Then, you can analyze those metrics for trends and patterns in user behavior to better understand the "why" behind them.

With a hypothesis in mind, you can test adjustments to your product and measure the resulting changes in your product metrics to understand the outcome.

The Challenge of Choosing the Right Product Metrics

You need data to make informed decisions about how to change, improve, and grow your product. However, the sheer volume of data available to product teams today is so vast that it can actually be unhelpful. Some of the challenges product teams face include:

- · Choosing a tool that gathers quality data and presents it in an intuitive format
- Matching the right data to your overall product goals
- · Deciding the right questions to ask and identifying the right data to track to find a meaningful answer
- · Interpreting the data to reveal insights and next steps to take
- Determining reasonable benchmarks for products in your industry and comparing how your product stacks up against competitors

Which Product Metrics Should You Not Focus On?

Don't fall into the trap of trying to measure too much. That's a recipe for overstretching your team. Sometimes, too much data can obscure the trends that matter most to your product's success.

For example, don't waste your time with vanity metrics. Vanity metrics are measurements that don't predict or measure meaningful results for your product. Some examples of vanity metrics are things like page views, "likes" on social media, and the number of email subscribers. Take the Vanity Metrics Test to determine whether you're focusing on the right ones.

Make sure not to whittle away the metrics that still give you important context and insight into user behavior. You can measure activation rate alone, for instance. However, if you don't also measure how quickly you convert acquired users to activated customers, it can be easy to miss an opportunity to make onboarding more efficient. That oversight would mean it's taking longer to show users value, making it more likely they will churn.



Empower Your Business with Insight into Product Analytics

Zeroing in on the right product metrics helps you align with the immediate and big-picture goals of your product management strategy. Tracking those metrics carefully lets you stay agile as you optimize your product over time.

The next step is finding a robust product analytics platform that makes those product metrics accessible and easy to understand for your whole team.

Try Amplitude's free starter plan to gain insight into how your products are performing and see a real-time look into the metrics that matter to your business. Or explore the metrics in the charts shared throughout this guide by using Amplitude's self-service demo, then navigating to the Product Metrics dashboard.

No matter what question you have about how customers are interacting with your product, we have the answer just a few clicks away.