

Product Metrics

What are product metrics?

- Product metrics are **quantifiable data points** that a business tracks and analyzes to evaluate the success of its product.
- By using interactive product metrics, companies can optimize product strategies to ensure business growth.
- Determining the **right metrics to monitor and analyze** leads to more intelligent decision-making throughout the product development process.

What are KPIs?

- These metrics, sometimes called **key performance indicators (KPIs)**, give the company quantifiable evidence about which aspects of the product / customer experience are resonating with customers, and which aren't.
- Product KPIs can be related to user requirements, size, quality, product growth, or user comfort.
- They can evaluate architectural measures, quality measures, software complexity, or functional size.



How do companies use these metrics?

Depending on their goals, companies may use product metrics to :

- Set their product roadmap
- Evolve product strategy
- Make changes to their product
- Forecast revenue
- Measure the impact of individual features
- Better understand user behavior
- Evaluate the success of a launch
- Segment their market
- Test product hypotheses

Why are they important from an interview perspective?

Metric definition questions come up very frequently in Data Science interviews.

These questions are generally meant to :

1. test your ability to understand the goal of a product,
2. trace the customer journey with that product and
3. map both the goal and the journey to a set of quantifiable measures.

Understanding different product metrics -

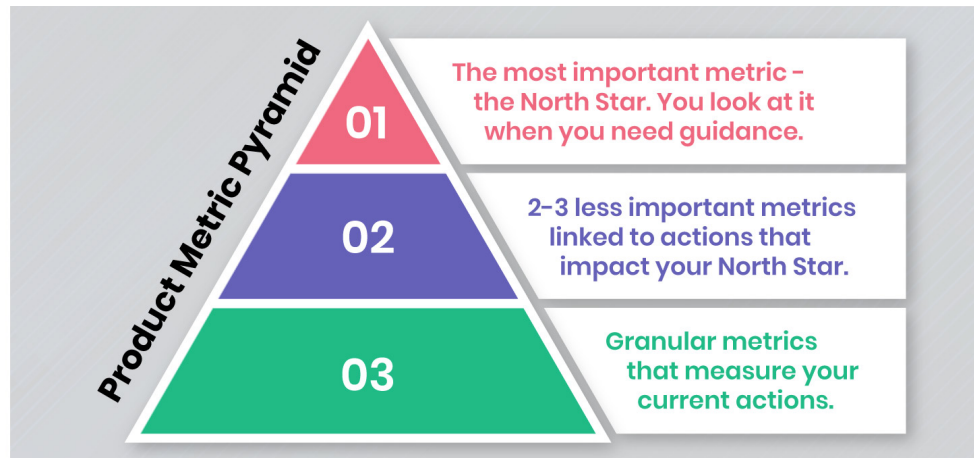
There is no fixed categorization of product metrics.

Classification can be done on different levels, based on the

- Goal
- Task
- Type

of the business and so on.

We will look at the three labels of metrics that a company follows in order to grow :










Focus metric / North Star metric -

This is the single most important measure of success that matters a lot to a company.

A North Star Metric (NSM) should be :

- A direct reflection of the company's mission
- An indicator of how a company brings value to its customers.
- The only one of its kind. (Avoid having multiple NSMs as this tends to create complexity and confusion)
- The answer to the following question: What is the one metric that best represents the desired outcome of your company?

Which metric, if it were to increase today, would most accelerate my business' flywheel?

	Monthly Active Users
	Time Spent Listening
	Booked Nights
	Rides per week
	Daily Active Users
	Questions Answered
	Daily Active Users

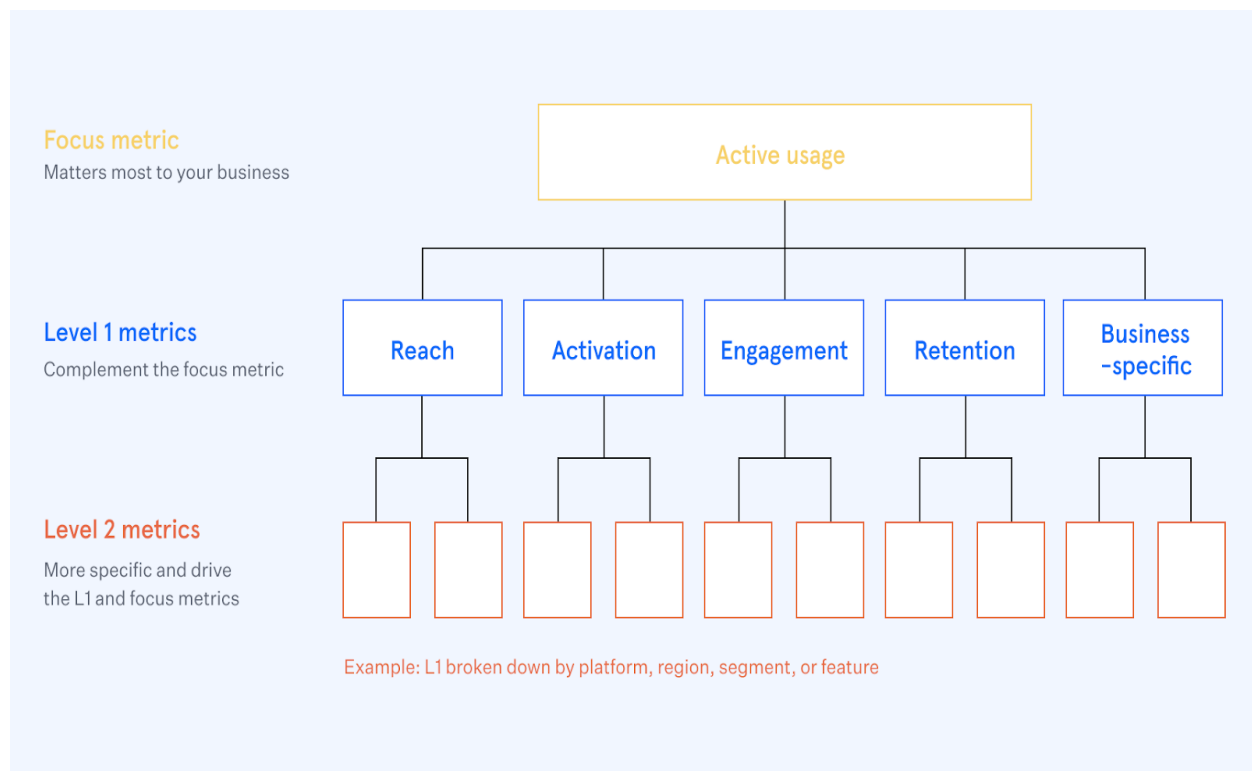
Level 1 metric / Primary metric -

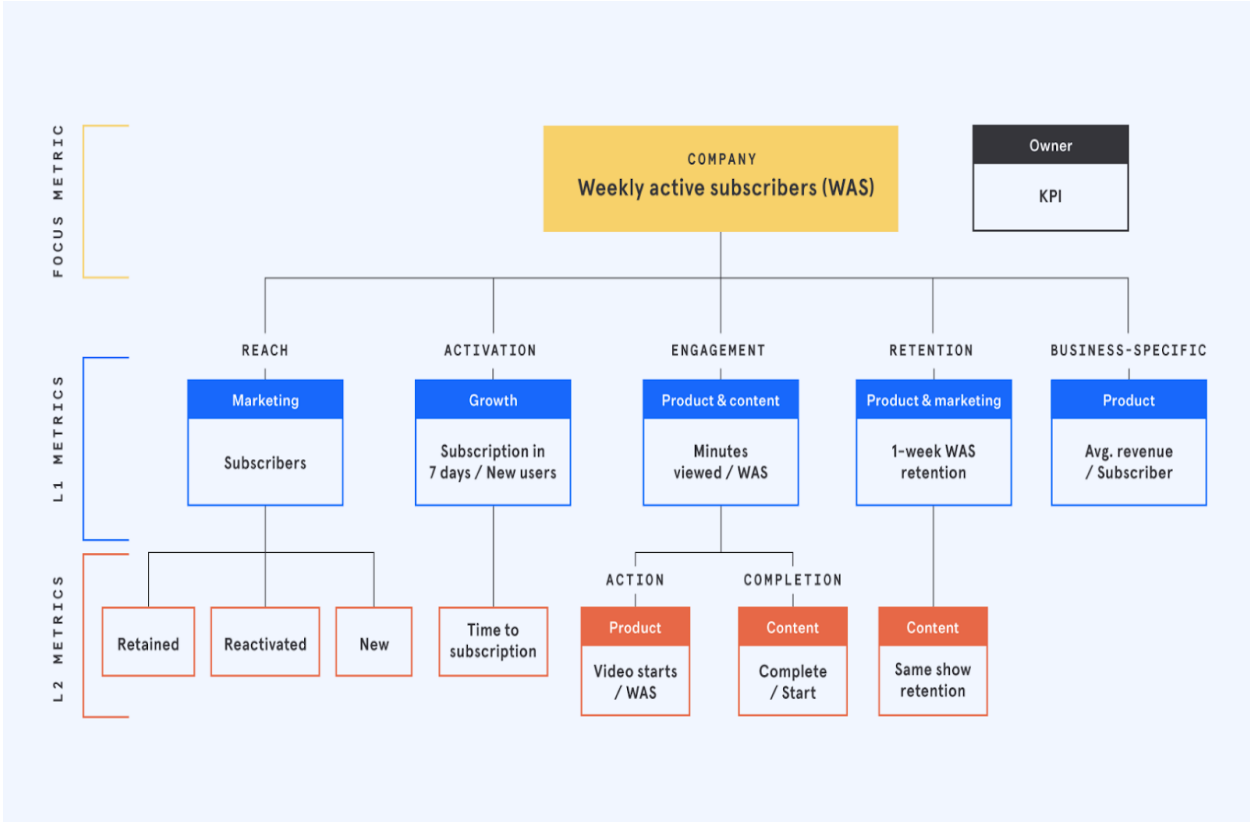
- Primary metrics depict the desired outcome of a particular product, team or initiative. This is unlike the NSM, which represents the desired outcome of the company as a whole.
- Level 1 (L1) or primary metrics should either directly contribute to the focus metric or act as a check to make sure the product is growing in a healthy direction.
- The primary metric can be more valuable than the NSM in the short-term because of its narrower focus, tighter feedback loop and more immediate association with the specific product, team or initiative in question.
- For example, if a product's focus metric is Weekly active user, a good L1 metric would be 7-day retention to ensure you aren't spending precious marketing funds to acquire new users who leave after a day or two.

Supporting/ Tracking/ Input metric / Level 2 metric -

- Performance indicators which are set for the current initiatives that are most granular and mostly used for tracking the progress at lowest level.

- For eg. - There may be some targeted marketing or segmented offers that need to be checked.
- Supporting metrics are indicators that the primary metric is moving in the right direction.
- To take the retention example one step further, the Level 2 metric could be iOS app retention.
- Another could be a Level 2 metric such as the retention of a region or segment of customers.





		Financial Services	SaaS	Retail & Ecommerce	Media
Reach	Question	How many people have used the product in a recent time period?			
	Sample metric	Account holders, Signed-in users (3-month window), Subscribers	Users from paid accounts, Active licenses	Active buyers (6-month), Paid subscribers	Paid subscribers, Viewers (3-month window)
Activation	Question	What percentage of new users have onboarded and experienced your product's value?			
	Sample metric	% of new users who:			
		Made first deposit within 7 days	Completed registration within 30 days	Completed first purchase	Watched 5 videos in the first 7 days
Active usage	Question	Are people showing up regularly and performing a key action?			
	Sample metric	Weekly active users (WAU), Monthly active users (MAU)			
Engagement	Question	How engaged are your active users?			
	Sample metric	Transactions, Deposits	Viewed reports, Multi-feature users	Conversions, Recommended product views	Minutes watched, Article reads
		Divided by active users (WAU or MAU)			
Retention	Question	How many of your active users come back?			
	Sample metric	7 or 30 day retention			
Business-specific	Question	How else does your business deliver value?			
	Sample metric	Savings / Debt ratio of users, Fraud events / User	ARR / DAU, Support tickets / WAU	Average purchase price, Cart abandonment rate	Shares / WAU, Multi-device users / WAU

What's a product metric interview question?

- Metric interview questions test if candidates can perform data analysis and select key metrics that matter most to the success of a product.
- Employers like Facebook and Google use these questions to evaluate critical thinking and communication skills.

There are two types of metric questions:

1. **Metric definition** based :
 - Metric definition questions focus on your ability to define metrics that provide clarity on the health of a product or feature.

- Here's an example question: "What metrics would you use to determine success for Facebook Sponsored Posts?"
- There are many different metrics you could be tracking (e.g. impressions, clicks, return on ad spend, etc.) and your interviewer will want to hear you select the most important ones using a rigorous process.

2. **Metric change** based :

- Metric change questions test if you know what to do when a key product metric (e.g. traffic, revenue, engagement, etc.) is going up or down for no apparent reason.
- This is almost the same as root cause analysis ie: an approach for identifying the underlying causes of an incident so that the most effective solutions can be identified and solved.

We will be focusing on metric definition questions here -

Framework for working on such problems -

Here is how you can answer a metrics definition based question :

1. Describe the feature
 - Explain your understanding of the feature, what problem it solves, and how it solves it.
 - Clear if everyone is on the same page related to the problem and features.
2. Determine the goal of the feature
 - In a metrics question you are measuring the success of a feature in achieving a specific goal.
 - Hence, it is crucial to have clarity on what that goal is.
3. Walk through the customer journey
 - Understand the funnel of the product and customer interaction.
 - Walk through the user journey from beginning to the end of the interaction with the feature.
 - This step also helps you think about potential behaviors that can impact the success of the feature.
4. Map and quantify user behaviors

- Mapping user behaviors that are part of the customer journey and impact the goal of the feature in a positive or negative way.
- Examples of the customer journey phases a user can go through: Awareness, Acquisition, Activation, Engagement, Retention, Monetization, Referral.
- Review the phase by highlighting various scenarios / behaviors and relevant outcomes that can have an impact on the goal(s) and explain why measuring the behaviors and (or) their outcomes is relevant.
- This step helps you determine what needs to be measured.

5. Evaluate your metrics

- Now that you have gathered a list of metrics that impact the goal, evaluate them based on some meaningful criteria such as reach, impact, confidence, and effort.

CASE 1:

What metric would you look at, to improve retention for a fitness application?

Problem Statement :

There's a fitness company "PureFit", who has launched their new application that has various fitness related information like videos and information on how to perform certain exercises, diet management plans, etc.

They also have classes and live sessions for users to join and follow.

There are two types of customers :

1. **Free customers** that have access to certain videos and information, nothing customizable.
2. **Paid customers** that can get personalized diet plans and advice from experts with respect to their fitness goals.