PRODUCT MANAGEMENT

PDM 5.0

Data Literacy

GENERAL ASSEMBLY

Pt. 1: Data Literacy

LESSON ROADMAP

Welcome + Warm-Up

Defining Data Literacy

Understanding the Data

Choosing good product metrics

Bring It Home

WELCOME + WARM-UP

Data Literacy

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LEARNING OBJECTIVES

1. Describe how and why product managers use data.
2. Review and communicate data to support informed decisions.
3. Explore tools to access and manage data.

Defining Data Literacy

Data Literacy

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WHAT IS DATA LITERACY?

Ability to **read, write, and communicate data**

Without data you're just another person with an opinion.

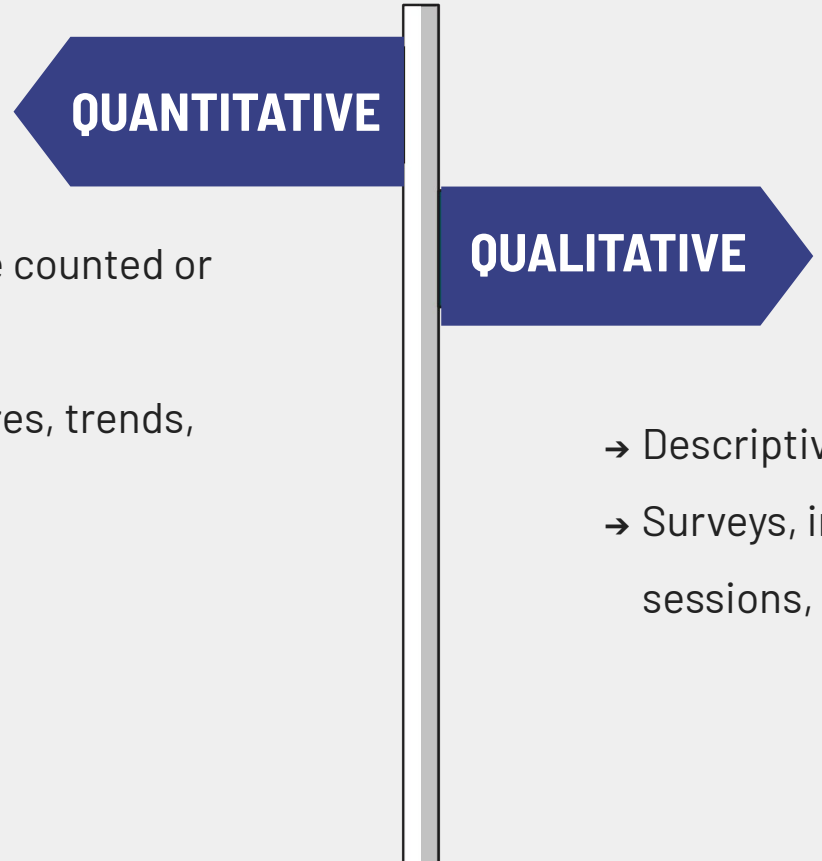
Edwards Deming, Statistician

HOW PMs USE DATA

- To measure/assess the impact of a pain point
- To measure/assess the opportunity of a potential solution
- To measure/assess the success of an experiment
- To define a goal
- To measure/assess the success of a goal

- To track the progress of an implemented solution over time
- To identify any anomalies or errors in the system
- To understand their customers
- To predict behavior

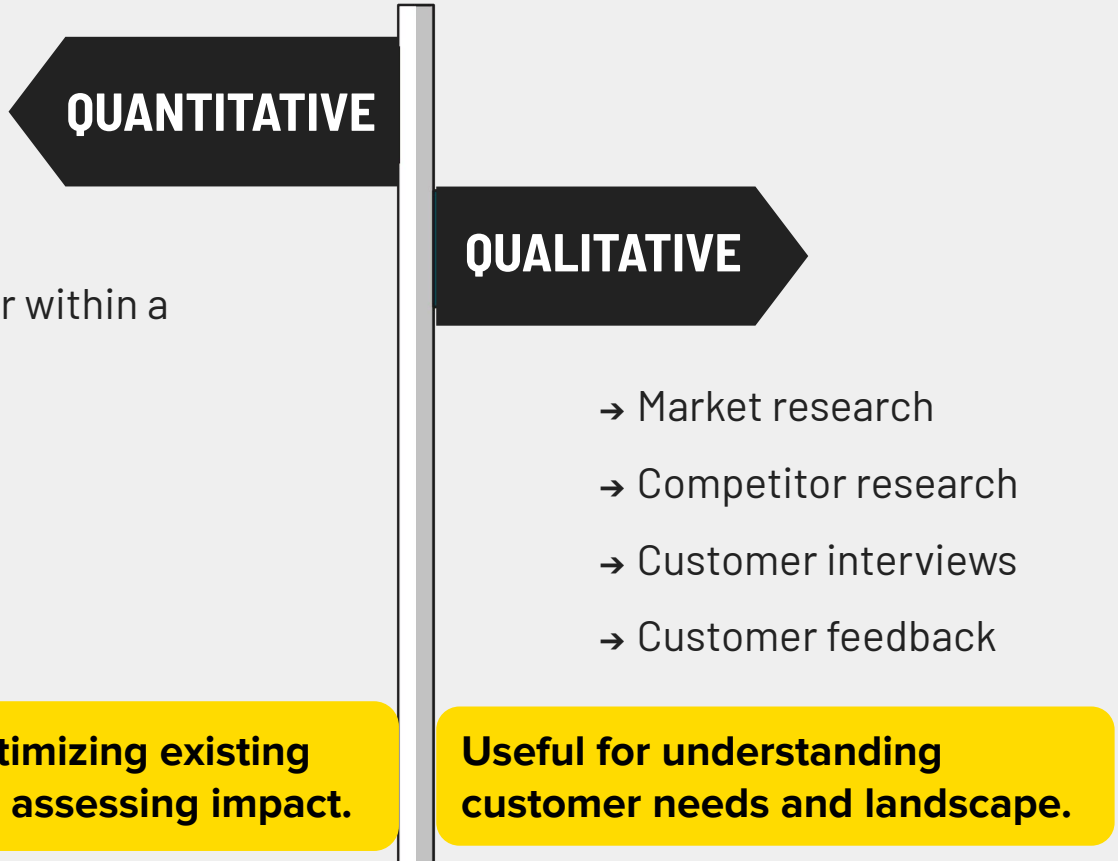
TYPES OF DATA



- Numerical; can be counted or measured
- Informs us of scores, trends, lifecycles

- Descriptive in nature
- Surveys, interviews, usability sessions, conversations,

EXAMPLES OF DATA PMs USE



- Product usage
- Customer behavior within a product
- Financial metrics
- Test results
- Charts and graphs

- Market research
- Competitor research
- Customer interviews
- Customer feedback

Useful for optimizing existing products and assessing impact.

Useful for understanding customer needs and landscape.

Quantitative data tells you that there is a problem.

Qualitative data tells you what that problem is and why it exists.

Both types of data are important.

GETTING STARTED WITH DATA

Be very clear on the following:

What are you seeking to learn/measure?

Why are you wanting this information?

Is the technical infrastructure in place for you to access and regularly monitor the information your seeking?

Be mindful of any unknowns: could any other factors inform the data?

We are surrounded by data, but starved for insights.

Jay Baer, Marketing and Customer Experience Expert

WHAT IS AN INSIGHT?

An insight is a discovery about the underlying **motivations that drive people's actions**.

An insight is something that can **lead to definitive action**.

OBSERVATION VS INSIGHT

80% of users access our site on mobile, so we should focus on simplifying our mobile site.

vs.

People will wait to pay bills until the day they're due so their bank account balance is as high as possible, helping them feel better about looking at their bank account.

Understanding the Data

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5 Minutes

What do you see here?

You can't take data at face value.

You need to look at the entire story.

Data is everywhere — which makes fluency in understanding, using, and communicating with, and about, data an essential skill. Often, we focus on building impressive visualizations and models only to find our audience confused about what we need them to actually learn, or act on, from our data.

Diedre Downing, Lead Data Storytelling Trainer, Story IQ

FOR EXAMPLE: WITH DATA IN HAND . . . ANSWER

The ultimate goal of analysis is to answer questions like these:

What are your **charts** and **graphs** telling you?

Do they answer your question for analysis?

What insights do they provide?

What do you do if the answers are inconclusive?

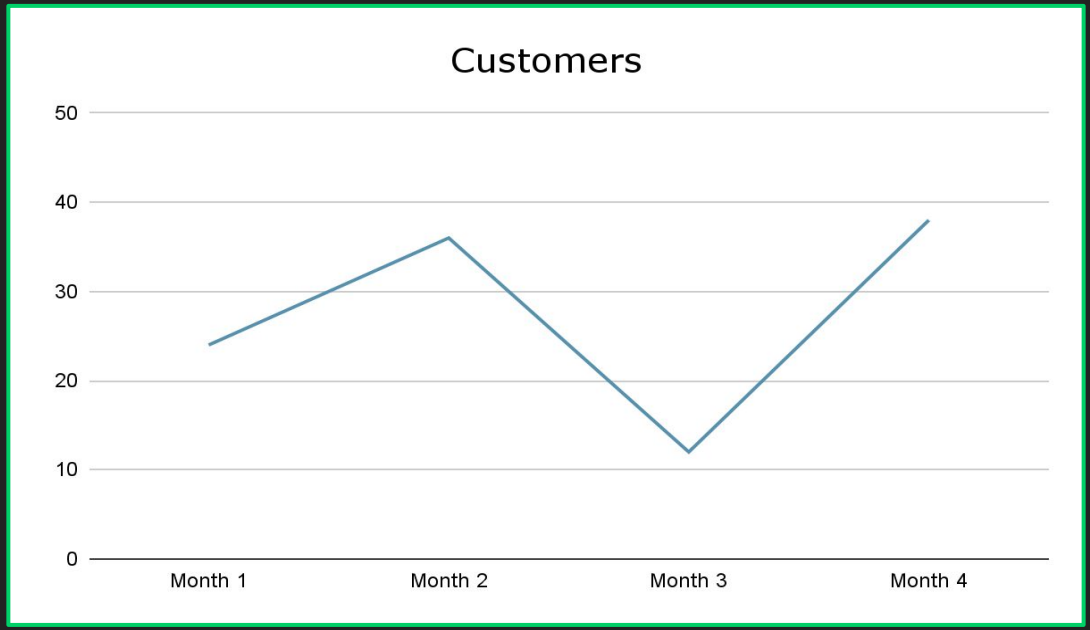
What else do you need to know to make a decision? What's overkill?

DISCUSSION: WHAT STORY DOES THIS TELL?

5 Minutes

DISCUSSION: WHAT STORY DOES THIS TELL?

5 Minutes



COMBINE QUANTITATIVE + QUALITATIVE DATA

Example:

We found that in Month 3 we had a churn rate of 66%. We talked to the marketing team and discovered that they eliminated a promotion at the end of Month 2. Additionally, we sent a survey to customers who churned.

More than half stated it was due to the end of the promotion and provided the following feedback:

> "The product is great but not worth full price. Sorry." - Customer 1
>
> "I can use other tools for this. They may not work as well, but they get the job done. And it saves me money." - Customer 2

TAKE DATA FROM MANY SOURCES + COMBINE IT

- Quantitative data over time
- Quantitative plus qualitative
- Many interviews or other qualitative methods

Start by digging into the quantitative data.

Flesh out your understanding by then digging into the qualitative data.

10:00

BREAK TIME

Choosing good product metrics

Data Literacy

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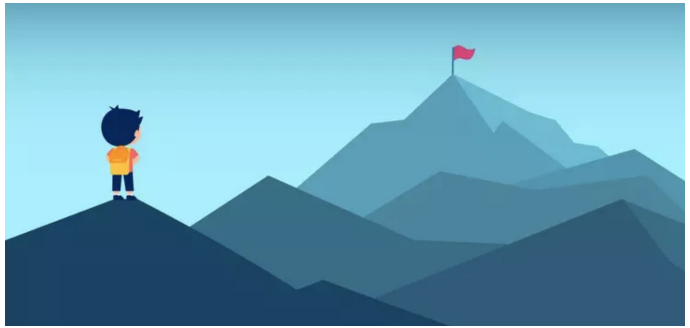
Discussion:
Goals and Metrics

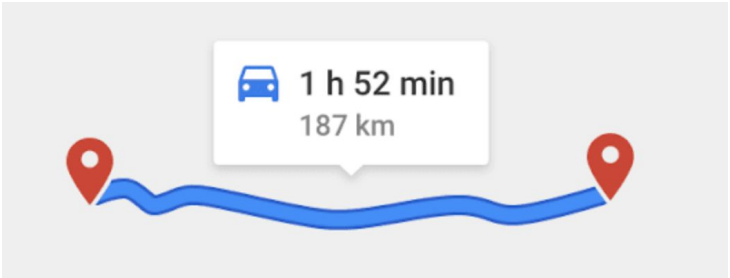
Product Goal

The destination you'd like the product to get to.



Product Metrics

How you measure progress towards product goals.



Discussion:

Metrics and Goals

2 minutes

Given these metrics, what goals would they support?

10,000 new users this quarter

15% reduction in cart abandonment compared to this time last year

Average user opens the app 5 times per day

Breaking It Down

Term	Definition	Example
Goal	What you're setting out to accomplish in the future.	Improve retention among users who have had the service for more than one year.
Metric	How you know you've accomplished your goal.	• Number of returning customers compared to previous quarters • Account cancellation rate

Metrics Can Take Many Forms

Raw numbers	$650,000 in annual revenue
Averages	Average session time: 45 minutes
Percentages	10% increase in user retention
Rates	3,000 site visits per week
Ratios	8 free users per 1 paid user

A Good Metric Is...

Understandable

If you're busy explaining the data, you won't be busy acting on it.

Comparative

Comparison is context.

A Rate or Ratio

The only way to measure change and understand the tension between two metrics.

A Good Metric in Practice Is...

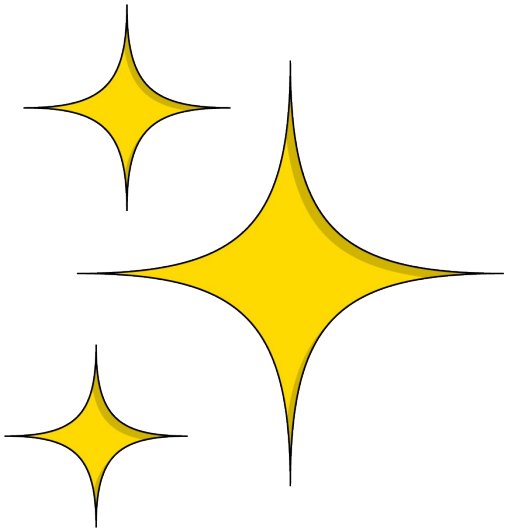
Understandable	Comparative	A Rate or Ratio
10,000 new users this quarter	15% reduction in cart abandonment compared to this time last year	On average, users open the app 5+ times per day

Discussion:

Not-So-Great Metrics

2 minutes

What is a vanity metric?



Discussion:

Not-So-Great Metrics

Vanity Metrics

… make you feel or look good, but don't actually give you any insight into how to improve things.

Actionable Metrics

… give you **actionable insights** into how to improve things (or at least where in the experience the problem is).

Discussion:

Not-So-Great Metrics

5 minutes

Spotify

Choose the vanity and actionable metrics from this table.

User retention	Email subscribers
Page views	Sessions
Trial conversions	Time in app
User churn	Mobile app downloads
Registered users	Referrals

Discussion:

Not-So-Great Metrics (Cont.)

2 minutes

It depends!

Vanity Metrics	Actionable Metrics
Email subscribers	Trial conversions
Page views	Sessions
Time in app	User churn
Mobile app downloads	Referrals
Registered users	User retention

Discussion:

Using data to spot opportunities

5 minutes

Which stage of this product flow is the biggest problem?

Stage	Number of user actions
A	13,768
B	9,326
C	4,685
D	2,931
E	568

Discussion:

Using data to spot opportunities

5 minutes

Which stage of this product flow is the biggest problem?

Stage	Number of user actions
A	13,768
B	9,326
C	4,685
D	2,931
E	568

Stage	Conversion % from prev
A	-
B	67.7%
C	50.2%
D	62.5%
E	19.4%

Partner Exercise:

Metrics and Goals

5 minutes

You're a product manager at Spotify, who are trying to grow.

Brainstorm **3–4 metrics that you would track** to determine if you're on course to meet each of these goals:

- Driving adoption of a new feature for creating playlists.
- Converting users from free to paid accounts.

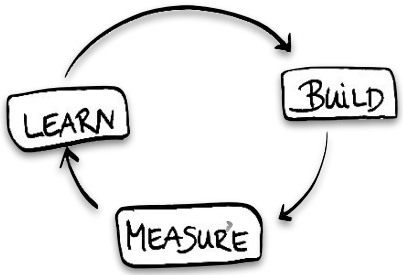
Which Metrics Matter Most?

It depends:

1. What phase of the product life cycle is your product in?
2. What “game” is your product is trying to play?
3. What are you trying to learn or improve?

1. Goals & Metrics vs Product Lifecycle

1	2	3	4	5	6	7
Conceive	Plan	Develop	Launch	Iterate	Steady State	Maintain or Kill



"Build, Measure, Learn" from "Lean Startup": http://theleanstartup.com/principles

1. Goals & Metrics vs Product Lifecycle

	Goal	Metrics
Conceive / Plan	Define opportunities	Customer feedback, customer behavior, market size, market dynamics, competitive insights, business goals, OKRs
Develop	Define & deliver initial feature set	Budget estimates, time estimates, resources available
Launch	Support launch, understand product-market fit	Sales, customer growth, usage, customer satisfaction, referrals
Iterate	Iterate product-market fit, drive growth	Customer behavior, usage, customer feedback, customer satisfaction, test results
Steady State/ Maintain or Kill	Maintain product relevance and ROI	Return on investment, revenue, development costs, customer growth, usage, market dynamics, competitive insights

1. Goals & Metrics vs Product Lifecycle

	Goal	Metrics
Launch	Support launch, understand product-market fit	Sales, customer growth, usage, customer satisfaction, referrals
Iterate	Iterate product-market fit, drive growth	Customer behavior, usage, customer feedback, customer satisfaction, test results
Steady State/ Maintain or Kill	Maintain product relevance and ROI	Return on investment, revenue, development costs, customer growth, usage, market dynamics, competitive insights

If your final presentation is about an early MVP,
your Objectives & Key Results will be focussed on these stages!

2. What “game” is your product trying to play?

- The **Attention** Game: How much time are your customers willing to spend in your product?
- The **Transaction** Game: How many transactions do your customers make in your product?
- The **Productivity** Game: How efficiently and effectively can someone get their work done?

*Concepts reference Amplitude’s “North Star” metrics framework
https://amplitude.com/north-star
https://amplitude.com/north-star/getting-started-running-a-north-star-workshop

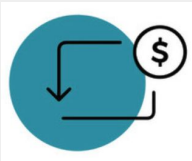
Discussion:

Metrics per “Product Game”

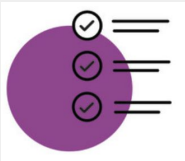
5 minutes

Attention

Transaction



Productivity



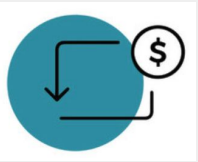
Discussion:

Metrics per “Product Game”

Attention

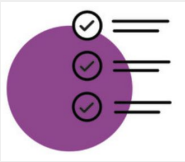
- # of users who add 7 friends in the first 10 days
- Daily Active Users / Monthly Active Users (DAU/MAU)
- Average # sessions per user per week
- Total time spent per week

Transaction



- Conversion funnels (% of users who go from Step A to B)
- Shopping cart abandonment rates
- Average purchase size or frequency
- Repeat purchase
- Referrals

Productivity

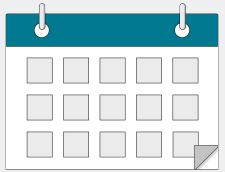


- Task Efficiency (doing things well / fast)
  Eg time per task, % time reduced, # clicks/actions per task flow...)
- Task Effectiveness (doing the right things)
  Eg Avg number of students per class, % of critical clinical test results acknowledged in < 2 hours...)

3. What are you trying to learn & improve?

Intent to Use

Activation



Engagement

Source: https://www.intercom.com/blog/finding-the-metrics-that-matter-for-your-product/
Alternative - “AARRR” Pirate Metrics: https://www.productplan.com/glossary/aarrr-framework/
Alternative - Google’s HEART”: https://library.gv.com/how-to-choose-the-right-ux-metrics-for-your-product-5f46359ab5be

3. What are you trying to learn & improve?

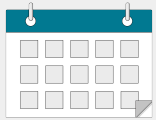
Intent to Use

- App downloads
- Information requests
- Account creations
- Email subscriptions
- Page visits
- Time on page
- Free trial accounts

Activation

- Time to convert from free trial to paid user
- % of customers using a feature
- Key actions taken per session
- Sessions per user
- Active users
- Time in app

Engagement



- Churn rate
- Retention rate
- Time since last visit
- Referrals
- Net promoter score (NPS)
- Customer satisfaction score
- Repeat purchases

Real Cases:

What Metrics Would You Measure?

5 minutes

In the “growth” phase of Spotify, one key challenge was improving the percentage of Spotify listeners who upgraded from a free account to a paid account. Their data told them that people who listened to more music per session were more likely to upgrade to a paid account, and they wanted to experiment with ways to influence that.

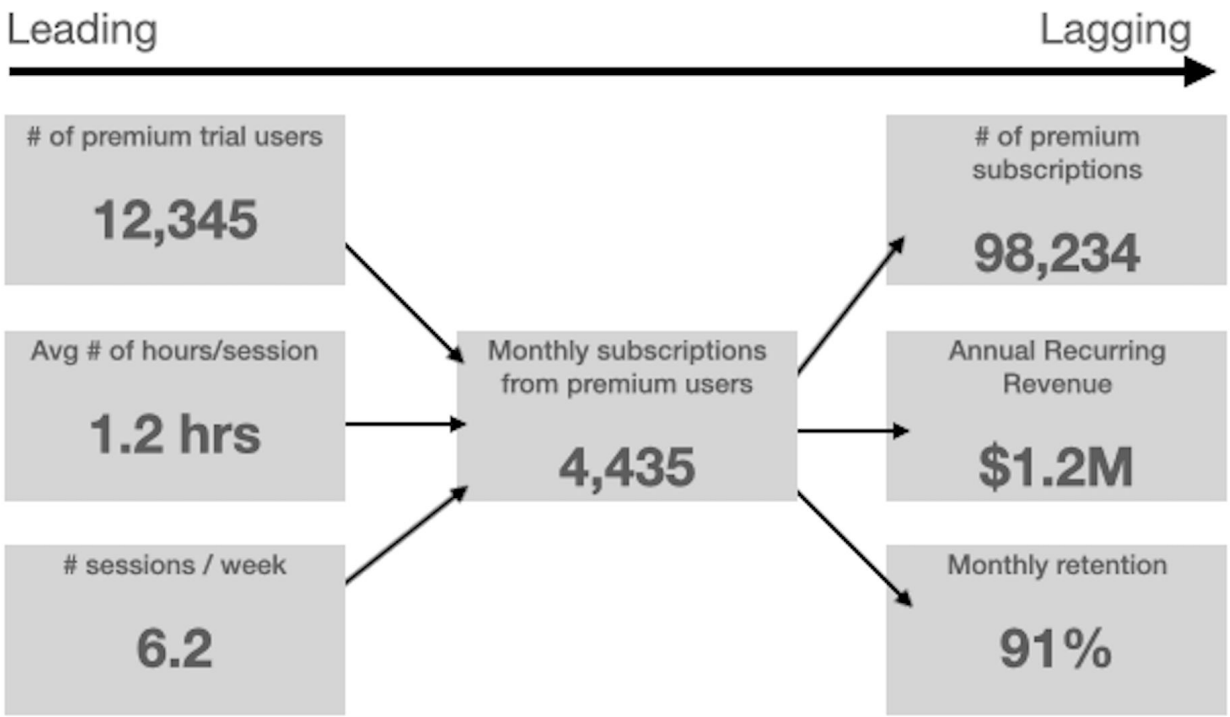
- **Insight:** People who listen to more music per session are more likely to convert from a free trial to a paid account.
- **Hypothesis-driven Goal:** People are not *Discovering* music they like to listen to easily enough. If we improve Discoverability, we will increase listening time.
- **Experiments:** “Fans Also Like”, “Your Top Mixes”, Curated Playlists, “Friend Activity”, Automatic playing of similar music when playlists complete...
- **Metrics:** ***Which metrics would you measure?***

Spotify

Metrics That Matter

https://amplitude.com/north-star
https://blog.doubleloop.app/metrics-driven-product-development-is-hard/

Metrics That Matter



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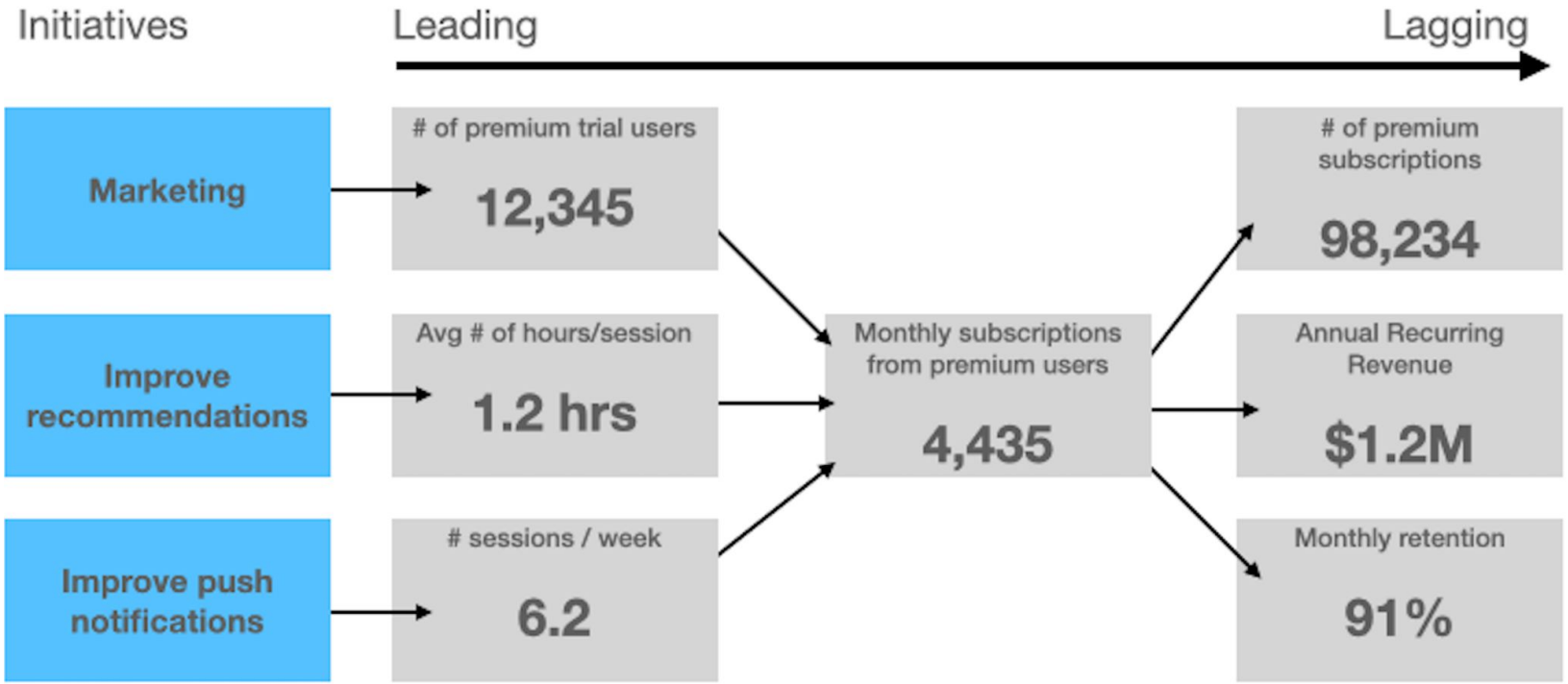
Metrics That Matter



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BRING IT HOME

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Additional Resources

Practice Again	Digging Deeper
Stakeholders & Metrics • Product Development Process | Definition and Overview (including physical products) • How to Manage Your Stakeholders as a PM • How PMs Can Better Tie Metrics to Product Strategy **Tools for Managing Product Health** • Pendo • Mixpanel • Google Analytics • Amplitude • User IQ **Bias in Data Collection** • Confirmation Bias and the Power of Disconfirming Evidence	**Stakeholder Management for PMs** • The Ultimate Guide to Stakeholder Management for PMs • How PMs Should Deal With Different Stakeholder Types **Data-Driven Product Management** • How to Make Data-Driven Product Decisions • 15 Key Product Management Metrics and KPIs • Make Better Business Decisions Using PM KPIs • The Only Product Metric that Matters by Josh Elman **Data Ethics** • Project Status Is Subjective: Linguistic and Cognitive Bias


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