**You are BA in the email marketing group at Amazon. Say the product marketing manager (PMM) wants to run an email campaign. What are some of the metrics you want to look at? Which metric do you think is the most important/relevant? Write down what metrics you chose and why.**

**最常见的思路是漏斗：（everything is a funnel——website conversion,user retention,email...）**

**Sent->open->call to action(click link)->conversion做你想让他做的事(buy sth., sign up,etc)**

**funnel的思路说完，再说一些其他的**

**刚才是从email本身的功效去考虑问题，另一方面也可以从email本身的质量，用户体验来衡量，有一个指标，叫：opt-out-rate: % of user who unsubscribe**

**思考PMM关注的目的是什么，关注的东西不一样，对效果本身的定义也不一样。**

发邮件是要达到某个商业的目的，email可能是educational,不要求用户立即做出行为，要关注后续长期指标。或者目的引导用户立即作出反应，就关心click和conversion。

取决于email本身，产品本身的目的。

MY ans: We can consider the metrics for the email campaign from the AARM framework: Acquisition, Activation, Retention and Monetization.

Acquisition:

1. Open Rate. Among email metrics, the open rate indicates the number of emails opened compared to the total amount delivered. The elements that affect opening rates most are the subject and preheader: carry out tests frequently and pay extreme attention when drafting interesting copy that arouses curiosity and urges recipients to open the message.

Actication:

1. Click-through rate. This is the number of clicks on the links contained in an email message, divided by the number of emails delivered. If a good open rate is indicative of a good subject, the click-through rate is determined by the email’s content – images, copy and especially calls-to-action.
2. Click-to-open rate. This measures the number of clicks with respect to the number of openings, and is thus the most accurate metric for measuring the level of interaction that messages can trigger. How many recipients close the email immediately after opening it? And how many of them interact with its content and go to the website?

Monetization:

1. Conversion rate: The conversion rate is the metric that measures how effective your message is in relation to your objective. For Amazon, we can measure how many users made a purchase after clicking the link.

Retention:

1. Return rate: proportion of users comes back continuing using this email account to purchase on Amazon.

Among these metrics, I will choose the click-to-open rate as my “north star” metric.

First, in an email campaign, our first goal is to attract users to click the link into our website. How many users will click the link is determined by the email’s content. If we want to know how effective of our email content and how to improve it, measuring this metric will give us lots of information.

Secondly, it is more accurate for measuring the level of interaction that messages can trigger. How many recipients close the email immediately after opening it? And how many of them interact with its content and go to the website? This removes the circumstances where users didn’t see this email or the email was sent to an invalid email address.

Finally, this metric is measurable. We can detect how many emails were opened by counting whenever the user displays the picture in the email, and it is also easy to count how many links were clicked.

**Before running A/B tests, we need to figure out how many samples are needed to achieve a certain level of statistical power. What are some of the ways to reduce required sample size?Write down your answer and why; don’t have to write mathematical formula.**

1. Use Prior Studies  
   It’s highly likely that someone, somewhere has performed a similar study. If so, we can use prior mean and variance estimates to reduce sample sizes.
2. Change the alpha level to 10%. Larger alpha levels lead to smaller sample sizes. For example, an alpha level of 10% will need a much smaller sample than a test using α = 1%.
3. Use population proportion to reduce the variance.

系统回答： 记住Power的计算公式/有多少影响因素

A: magnitude of effect(u1-u2): increase

~~B: sample size in each group(n):~~ decrease

C: sample standard deviation(sigma): decrease

D: Type I error(alpha): (determine the right critical value, t(1-alpha)): increase

ANS:

A Increase the level of uplift you want to detect.(detect 10% difference, not 5%)；

B Subset on population(filter out ineligible users)

C Change to less volatile metric(so that sd is smaller)

D Increase Type I error

Run longer (assume not too many repeated users)