KPIs and Experimentation

Day 2 Lecture

Transcript:

for the day two
   1:32:01
lecture leading and lagging metrics um ultimately almost every metric that you
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write should be correlated in some way with money and the metric might even be
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money revenue is its own metric um one of the problems with Revenue as a metric
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is that it can be kind of slow moving and it's uh and there's a lot of things that have
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to happen before Revenue happens and so generally speaking revenue is going to
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be uh what I would call a lagging metric whereas there's going to be a lot of other leading metrics right so in this
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case as data Engineers the data that we provide should be linked to money either in
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increasing revenue or a decreasing cost so maybe we're optimizing a job and uh
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and so that's like we're we're it's very meta when you're optimizing pipelines
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it's a very meta way of doing it because like your the data about the data that
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you're creating is saving money right it's very like meta but maybe you're supplying data that makes customer
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service more efficient and then that makes their process faster and their thing better so that's what I'm saying
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in that case it's like you're supplying data that cuts cost costs in other areas of the business but that's not to say
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that data engineering itself doesn't have costs so you can do it that way too optimizing pipelines optimizing business
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processes uh reducing cost and you can also have it be on the other side where you can increase Revenue where uh you
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maybe you have new data sets that uh provide new additional context that

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allow people to take more risks or to have have a better understanding of the

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competitive environment so that they can raise or lower prices to get more volume

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or more uh margin and so there's all sorts of these metrics in the business

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area that are going to be linked to money I think there is like one uh exception here obviously the one

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exception I think is uh where you're working in like a

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nonprofit if you're like a non like working in like a charity or a nonprofit then maybe your uh North Star metric is

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different where it might be lives saved or people helped or children educated or

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Garbage taken out of the ocean but even then uh even nonprofits still care about

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the other side though they still care about spend they still care about cost and spend because that side of it how

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how much you spend if you can make that more efficient then that's going to increase the goal the other goals of the

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nonprofit so even in nonprofits a lot of the metrics are still going to be about money so that's a key thing to remember

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here and like the the the other key thing I want to talk about on this slide is that money and revenue cost savings

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Revenue money all that stuff is generally speaking a lagging metric and

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there's going to be other metrics that are uh pre precede it that are correlated with that metric but move

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faster and are easier to capture so we're going to go in a a little bit more

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detail here okay so leading versus lagging so

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you have inputs and outputs so you could think about it like uh on a website you have the number of

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people who visit the website and then you have the number of people who sign up and then you have the number of

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people who buy you can think of that as like almost a like a two-step funnel right it has two places where people can

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kind of like fall off and so um the example there the input there is the

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visits the number of people who actually get to the website because just because they visited doesn't mean they're going

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to produce Revenue like there's there's a probably a high probability that they don't and uh but there's going to be a

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small percentage of users who visit your website who do buy and then those people are going to be impacting the lagging

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metric on the other side the kind of the more revenue and the sales metric on the other side so you can think of it as

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like if you have like a a process in place and you have a bunch of inputs into that process those are going to be

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your leading metrics in this example you have like web page visits and signups and maybe there's one Upstream of that

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of webpage visits maybe there's like social media Impressions because you have people who saw the social media

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post and clicked but you also have people who saw the social media post and didn't click and so and then you can go

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down one layer and down one layer down one layer right you can do all sorts of really cool stuff that way so that's

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definitely one way that you can go uh and that's like a good example of leading versus lagging metrics and

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generally speaking the further uh away and and obviously it's a Continuum right

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because if you have the social media impression to the website visit to the sign up to the purchase you can say that

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like okay you can actually probably put a dollar value on how much each social media impression is worth based on the

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percent of people who saw the post to the PE to the percent of people who bought which is usually a very very very

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small number but um in those cases uh that is called your conversion rate and

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that would be the full funnel that's like from everyone who was even a part of the funnel to to everyone who made it

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to the bottom of the funnel so and there's a correlation there and that's the conversion rate it's going to be the

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percent of people who saw the post on social media to the percent of people who actually bought which is usually a

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pretty steep drop off so that's the idea behind leading and lagging metric and uh they are they are all very

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important to look at and um because sometimes maybe it's not a conversion problem maybe uh maybe you're converting

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at a pretty high rate maybe 10% are converting and maybe it's an Impressions problem where you're not getting enough

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uh top of the funnel and that's the problem it's just you don't have enough leads or maybe and or maybe the

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conversion is the the problem or or maybe the sign up step is the problem there's like all sorts of different

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places essentially every step of this funnel should be analyzed because every step can have problems so yeah

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um uh another thing that we're going to talk about here this is where we're going to have a probably an interesting discussion uh is that these uh leading

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and lagging metrics can also apply to your life so for example uh if you're

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getting a job you could say that like I'm going to spend a 100 hours practicing SQL to get ready for job

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interviews and then the and that's like your input metric and then the the out

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the the the final funnel metric is is going to be like the um uh jobs received

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right and then you could also think of it as like you could have an extremely lagging metric which is like oh all

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those hours I spent learning SQL you know in five or six years I'm going to be running a boot camp where I teach

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people how to get better jobs and so like that would be the extremely lagging

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metric that's even more than just like I got the job right it's that I got I I I learned all the stuff and then I taught

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other people and then they got jobs and so that the funnel keeps going on and so

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like anyways when you're like trying to get a job there's all sorts of different things that you need to think about

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right where you have do you have the skills do you have the learning do you have the necessary skill set to even apply and then you also have like the

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application process of like how many job applications do I fill out how many recruiters do I talk to that kind of

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stuff that's another important piece of the puzzle right and then you have like further down you have how many interviews do I give how many interviews

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do I pass right and then how many job offers do I get and which job offer do I accept right there's like a lot of steps

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in that process of this kind of lead leading and lagging metric of like the professional world and one of the things

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you can think of is like okay the conversion rate in this case is how many hours

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uh of like practice like hours per job interview it's like a pretty good like

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rate way to think of like the um conversion rate of your job funnel and

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you might want to optimize that where you might be spending too much time applying for jobs that don't call you back or you might be spending too much

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time leak code practicing when it's like you're getting a marginal value from it and like who knows there could be a lot

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of different places in the funnel that you are not doing a good job so the whole idea is really there is

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a five-step funnel for like your learning and job environment where the first step is your effort um this is

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going to be things like what should I learn how should I learn it like how many hours am I

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putting in here how much effort am I showing how do I show up and then you have brand and networking which is like

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who are the people that I know how do I Market my skills how do I like get known for what I want to be known for then you

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have like the job interview like where should I apply how do I how am I successful in the job interview how how

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do I make sure that my skills match what the employers are looking for then you have job success which is like where you

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uh get the job and you are successful and you get promoted and like how do you keep learning and growing here and

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building up further and further up the ladder and then after that you have helping others and changing the world

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where you are able to get your job and get really far and then how can you teach and grow other people and get

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further along and have a an even wider more uh expansive impact on the world as

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you grow and um so we're going to go into each one of these a little bit more in detail because you want to be

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applying experiments in your life at at pretty much every single one of these

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steps so that you can get more input on like what is what is good and what is uh what is not

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working okay so we have the top of the funnel this is where you're learning and maybe networking the first two so uh I

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think that there's a lot of problems uh in that first bucket of like just jumping from tutorial to tutorial and

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like going too broad with your learning where maybe you're like I want to learn 13 programming languages because I think

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I'm going to be so good at the world right and like is that really is is knowing 13 really better than knowing

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three really well no all right and so there's going to be uh a lot of

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different things here and then obviously you have other things like you have people who are trying to sell you boot camps and people who are trying to uh

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you know you have paid you have paid stuff and free stuff and college and graduate programs and like there's so

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many different choices that you want to make here um another big thing that I I think is very important here because I

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get this question a lot is around like Zach should I go back to school should I go and get a master's degree and I think

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this is one of the big questions that's in this first bucket is and this is a an

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act of self-awareness when you're building out these learning funnels for yourself

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is how dedicated and motivated am I without

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structure right for example for me I'm on the extreme end where I built this boot camp out of thin air I didn't need

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anyone to tell me what what to do and how to build it I was just I'm going to build this thing and I'm going to do this thing and I'm going to show people

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how to do it and I'm going to kind of build my own path and learn my own way and that's essentially why for me I

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never I never found it interesting to go to graduate school nor did I find it necessary because I knew that like my

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own learnings and my own skill set is going to be good enough because I have such a thirst for learning that it

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doesn't matter whereas with other people uh they need that structure especially

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the earlier earlier you are in your career that's why I think for me I I'm grateful for my bachelor's degree in

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computer science I think that that was very good for me because that gave me a good like Foundation to kind of build off of so like a lot of times when

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people are like should I get a bachelor's degree I'm like probably like uh like like a boot camp replace to get

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a bachelor's degree a lot of the times is not going to be the case because you're not going to get the same level of foundation but uh that dep again it

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depends on the person because if if you have an extreme thirst for knowledge and you can uh you're a good

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self-learner then you're probably good um let's talk a little bit more about uh

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the second bucket uh where there's um you know brand building and networking because there's more to it than just

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being a good engineer you have to also uh be um building your network of people

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who know you so that opportunities come your way and you can build relationships and I think the number one mistake here

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is just people don't do it they don't take it seriously they think that oh I if I get good enough at coding a job

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will fall into my lap and like that's a kind of a ridiculous way to to go about it like I think I think of it similarly

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to like dating in that way where it's like oh yeah I'm going to find the love of my life sitting on the couch like

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that's I think a lot of people like honestly believe that about their career and uh that's totally not the case um

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obviously uh networking is important I would say Don't just Network on LinkedIn like uh Branch out to either other

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social medias or do like in-person events I love inperson events inperson events is really where I meet a lot of

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the people that I develop really deep Partnerships with so just just letting you know that that's another good thing

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to think about uh uh some questions and experimentations here or like how should

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I Market the skills I've learned like a a big thing there is like what job title do I want like how do I want to like go

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about it how do I want to grow my career do I want to Pivot I know for me that that experiment of how should I Market

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the the skills I've learned I've experimented with that question a lot in my career and like because I sometimes I

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get unsatisfied with being a data engineer and then I switch to being a software engineer then I go back to being a data engineer and I've kind of

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like jump roped a lot with that question I've ran an experiment a lot and then you also have like who should I network

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with because I think that uh especially if you're early on like it's hard to know like what networks and what

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connections are going to actually produce value I think a lot of people who are early in their career they think

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that networking is just passing your resume to people and then them giving you a job and they think it's very like

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transactional like that when it's like it's not like that at all like it's not like that at all you want to be when

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you're when you're thinking about building your network you really want to be thinking about how uh you are

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interacting with other people and supporting other people and showing up for other people and like providing them

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value in some way if you can those things are all very very useful for when you want to build your network so that's

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the idea behind uh the top of the funnel for your learning

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experience okay you have the middle of the funnel this is going to be brand building and job

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interview uh so there's a couple things here um I think a big one here that people make a big mistake on is they

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only apply to jobs where they meet all the requirements that's a big mistake
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very big mistake cuz like then you're just going to like you're never going to grow into a job you're only going to
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ever get a job that you're completely comfortable with which means that you're going to grow very slowly and that's not
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the way to go like uh I I I one of my most viral posts on LinkedIn ever was one where I talked about how when I
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applied to the job at Airbnb it said that it need uh that the person they were looking for it was 10 plus years of
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experience and I had six and so and I got the job so like sometimes like you
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can because it's like if you can get the interview they already think that you have enough of like your background is
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already fitting enough and it's all about just being convincing in the interview at that point and if you can do that then great that's the middle of
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the funnel let's go a little bit further down okay so um you have uh this next
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part of the funnel which is going from job interview to job success and job interview to job promotion um in this
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case we're no longer talking about filling out applications like you already got the interviews right um I
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think uh a big thing here right is um in the interview I think people get caught
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up with trying to prove themselves a lot of the time especially in big Tech I
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think this is less the case uh in other interviews but in big Tech in particular
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uh there's like it feels like the interview is one-sided where like you're
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trying to prove to Facebook that you're a good enough engineer but like that Facebook doesn't have to prove anything
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to you they don't have to show up and anything like that right and like I mean that's always like you know in all the
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big Tech freaking companies I've asked this question this is one question that I've asked in uh every single engineer

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who I um uh have interviewed with I say like if you could change one aspect of

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your job what would it be and see what they have to say listen

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to them that's why I will never work at Amazon right so it's like cuz Amazon is

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like just so hardcore and so intense and so like and they're not going to change

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right they're not going to change that's not something if you accept the RO at Amazon that's what's going to happen right is you're going to you're

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accepting a lot of intensity and you're accepting a lot of just like just a lot of work and so uh you need to learn

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about the whole company as well and just because you're interviewing and a lot of times like that's why I like talking to

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the individual Engineers not just the hiring manager because I feel like the hiring manager has a lot more pressure

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to put someone in a seat whereas the the individual Engineers on the team they generally don't have as much pressure so

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they like they are more likely to tell you like the complete truth about working at that company so um that's a

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big thing to remember always ask questions because it makes you look good too it makes you look good too because

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it makes you look less desperate it makes it look like you're also evaluating them and uh the the interview

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panel will respect you more for it and I think that's one of the big things for me that has helped me a lot in my career

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and another big thing is like ask the manager the hiring manager uh uh about stuff right try to identify um a bad

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hiring manager before you join that team I think that's one of the big things that I I was looking at in my career as

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well is that like if you especially like if you're trying to find like someone who uh is a little bit more micromanage

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or anything like that and uh there's a lot of good questions that you can ask them to like uh try to pick out some of

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that right to see like see like obviously you can't ask like are you a micromanager because they're everyone

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says no to that because they know that that's like a bad word but if you ask questions that are more like okay if I'm

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like I like asking this question if I'm two weeks behind on a project and I'm not sure where it's going to go how

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would you react as a manager and just see what they have to

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say because your manager if your manager only supports you when when times are good like they're not supportive and

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they're not going to help you and so because that's one of the big things like if you have an an unsupportive

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manager is literally the most detrimental thing that can happen to your career and so like picking them out

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before you get the job is so much better than having to deal with them after you get the job like it's so much better uh

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it's like finding the red flags right and dating same idea um another big

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thing is like don't just focus on coding coding is only one aspect of it like I think for me as a staff engineer at

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Airbnb coding was only like maybe half the job or a little bit less than half the job whereas like a lot of it's more like leadership and uh diplomacy and

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compromise and design and scalability and a lot of stuff like that which are just very different things so like you

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know some other experiments that you want to think about uh on the other side here for job success and promotion is

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you say I say how do I take my job to the next level so sometimes you might want to recognize I do have an unsupportive manager and I will not get

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promoted in this current role and I need to look elsewhere and I need to go and interview again and that's how I'll take

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my job to the next level and that will be an easier way to get to the next level than uh working really hard and

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like trying to please my toxic boss right and another big one is like how do I keep providing value so this one is an

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interesting one because a lot of times like I've noticed at these companies like they'll ask you to deliver on some

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big project that might take a year or 18 months but then you have to keep seeking out more and more projects and so a part

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of that is okay how do I like Source all these projects and a part of that is like having a deeper understanding of

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the business and and talking with people and really understanding where some needs are and uh the other side of it is

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like just being able to recognize when things aren't scalable and and trying to find other pain points maybe even on

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your own team like weal we were talking a lot about on call this week in the infrastructure track and optimizing on

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call is always a very very Noble thing to do to keep providing value

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all right so we have the end of the funnel so um you have two pieces of this

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right where it's like okay you have your job success you have your promotion you're living your best life right uh at

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some point you should be thinking about giving back and thinking about how you're going to uh teach other people or

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grow other people or save the planet and it doesn't have to be uh through teaching and mentoring obviously that

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can be one path that's the path I chose as mentoring and teaching but there's a lot of other ways that you can help and

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change the world and like make sure that you do that make sure that you don't just like sit back and you're like oh

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man like I'm making so much money in big Tech now and I'm just going to like you know retire early and uh sip martinis on

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the beach for the rest of my life when there's like a lot of problems in the world and like like as data Engineers

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with the with disposable income we are incredibly incredibly incredibly

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privileged to be where we're at and so if that's the case like it's we kind of

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have a responsibility to give back and to help other people and to help the world get become a better place beyond

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just making you know Facebook and Google a lot of money so make sure to actually

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think about that as like you get further in your career and like and don't get too money focused and remember that like

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it's all about impact it's not about money it's about impact and if you can remember that that will be another very

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important part like kind of finishing off this funnel and getting to the end of your

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career so this is kind of a uh that's kind of like the whole funnel kind of

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thing we're about to uh break out into um breakout rooms we'll probably break

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out for about 15 20 minutes uh let me uh go to the next slide here so in our discussion uh this time we're going to

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have just uh three things here um one is going to be uh introduce yourself and

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your favorite SQL keyword or that' be like from select group by having

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whatever uh that's uh the first and then then you want to talk about your what

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leading and lagging metrics do you find important your in your career whatever those might be like uh part of it might

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be a learning metric or part of it might be an earning metric or part of it might be a balance metric or whatever whatever

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you want to talk about and then uh the last one is uh have have these changed as you progress throughout your career

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have you had any uh priority shifts let's talk about the kind of uh more of a product analytics example this is like

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more of like the actual meat of this presentation today so um if you think

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about it from the perspective of say I'm trying to sell someone something uh that

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funnel has the top of the funnel could be like I pay Google so that I show up

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first on the Google search result and then they see my link that's going to be like the first uh top of the funnel and

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then maybe they click on that link which would be the next layer right then they visit my web page right and then they

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sign up they give me their email that'll be the next layer and then uh once they are in the website then they will view

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the products and then they find a product they like and then they buy that product that's the next layer and then

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uh then they use that product for a while and they enjoy that product and they get a lot of joy out of that

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product that's going to be the next layer and then uh the the the final layer is they love the product and then

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they uh tell their friends about the product and that's where you get that kind of like testimonial and then they

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might want to buy again so you get like a kind of a big long kind of Journey for

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uh anyone in the in that kind of product space and you'll see we have the so you

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have testimonial as kind of the the final final Final end of this process

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cuz you can think about like the percent of people because if you think about it this way like okay on LinkedIn right I

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average like about 7 million impressions a month right and so you can think of like okay of those 7 million impressions

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in July when people were buying this boot camp okay how many of those are going to actually turn into uh into

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testimonials right so it can be like maybe 20 or 30 maybe if I'm lucky 30 if y'all love me right and so it's like

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what's 30 divided by 7 million that's a it's pretty small uh fraction there but

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that just goes to show that how these funnels uh have steep drop offs in a bunch of different places obviously the

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the very steep drop off here was the the $1,300 that I asked youall to pay or $1,800 right that was like because if it

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was free there would be thousands thousands and thousands of y'all in here and that would not be as uh good right

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because or or like I mean then that would not have as much of a steep drop off if I did a boot camp that was free I bet I could get a couple more

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testimonials that way but then I would starve so it's a little bit it's a tricky problem right so anyways you have

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uh product analytics this is a a massive funnel we're going to kind of uh I have another funnel visualization for y'all

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we can kind of go over so this is going to be the kind of the funnel that works

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with business and I'm actually going to go into great detail here about how I

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have been thinking like a product manager when building out this boot camp and how I've been really trying to

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improve different areas of this boot camp to make things better for y'all and so that we can uh so that I can because

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one of my goals right is I'm hoping that I can get as many because right now everyone in this call you are probably

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going to be since it's like the fifth week of the boot camp you're you're going to be between this purchase step

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and this engaged step most of y'all are going to be in the engaged step at this point because if you're still tuning in

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to the live boot camps in week five you're pretty engaged right so I I've already got y'all down to this like

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fourth step the funnel and I'm hoping that we can uh get through the whole funnel here with y'all as many as I can

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and so uh this is um a very common funnel that is uh just it runs the world

1:59:36

of business and we're going to go over in the same way we're going to go over that we went over the job application

1:59:43

and like getting a job funnel we're going to go over how this works essentially from a different angle in

1:59:48

more of a product analytics angle so let's uh let's dig into it okay so you

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have the top of the funnel so one of the only reasons that y'all are in this boot camp right now is because of something

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that I started uh two and a half years ago I started consistently getting Impressions on LinkedIn because um

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that's one of the beautiful things about organic reach in this current world that we live in is it's a great way that you

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can get Awareness on what you do and who you are and it can you know generate you

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revenue and it can help have you create more things right and so uh ever and

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keeping in mind that at every step in this funnel you can run AB tests you can

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run experiments you can do all sorts of analytics and having analytics AB tests

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and experiments all that stuff if you can do all of that like at each step of this funnel you're going to have a

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better time so uh for example uh for Impressions there's going to be a couple

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different things here uh I'm going to talk about a paid paid Impressions first and then we can kind of go over other

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things so one of the biggest things that you need to do when you are um looking

2:00:59
for uh when when you have a bunch of different channels that are spilling into your business is that you need to

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track where people are coming from so if you remember in the some of the other

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labs that we worked on there was that refer column in my website analytics and

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that is going to be the main way that I track that um I also track things a little bit like like that is not that

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great because that only tracks at the website level like I want to actually get to a point where instead I track at

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the content piece level so that I can uh do conversions and look at things more

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from like this piece of content is better than that piece of content sort of idea so I can actually uh on an adby

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ad basis I can actually look at things uh with a finer grain of detail I do not

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have that detail right now I only can so what I can do right now with my uh impressions of conversion analytics is I

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can compare Twitter to LinkedIn to Instagram to Tik Tok right at the highest level because I can compare

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those domains from the referrer but I can't I don't have the actual content

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links so I can't compare like a LinkedIn post to another LinkedIn post that is a future iteration on my analytics that

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I'm looking to do so that's going to be the first type of experiment that you can do is like really it's not even

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really an experiment it's more of like uh just an awareness because then if you have tracking all the way down to the

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piece of content then you can compare conversion rates between that piece of content and another piece of content and

you can be like okay why did this piece do so much better and then maybe it's uh something in the writing or the hook or

maybe someone else commented or there was like some other kind of anomalous thing that was going on in those pieces

right but anyways for me even at the high level that I have I have that you know just the platform level one of the

things that that uh taught me in throughout my business business was so when I did this stuff um so I have

31,000 followers on Tik Tok right it's not like I'm small on Tik Tok Tik Tok is my third biggest platform and so um when

I was selling uh my course and I made a video on Tik Tok about my course on my boot camp um nobody converted literally

zero zero converted even though I had the tracking and no one bought and I was like Wow Tik Tok sad like Instagram

converted great on a on a percentage basis Instagram was the best Instagram

converted better than LinkedIn but LinkedIn converted the most because I just have such a big following on LinkedIn but Instagram on a percentage

basis actually was the best and so um that was I I learned a lot just from my

about my own social media usage and my own social media powers and like which platforms I need to invest more in so

after selling this boot camp I learned that like the platforms that I need to invest more in are LinkedIn Twitter and

Instagram or X now I guess as was called but Twitter I'm still calling it Twitter uh those three platforms converted

really well and uh so that's one um now let's say I ran paid ads I don't really do paid ads because like I don't

necessarily think that like the ROI on them is worth it but you could also Imagine okay how much does it cost per

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click like you can iterate and experiment with the different creative art that you have the different

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marketing art that you have and you can see like oh people click on this more often than this and then that makes our

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ad dollars go go further so you can kind of experiment with ad creatives and then to understand like how to get more

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people to actually click and more people to actually convert and again like you

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want to put that you want to put a channel tracking or a Content creative tracking like I'm sure you've seen when

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you like click on a piece of content on Facebook it has like this weird like UTM

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Source equals it throws that in the URL and then your url is like really long and nasty it's because like a lot of

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these platforms already do that for you automatically uh linkedin's not one of them actually but uh that's going to be

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your first kind of set of different experiments that you can run at the very

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highest level the funnel this is just to like this is experimenting with how many eyeballs can I get on the thing that I'm

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building and then it's like okay great that means that some of them are hopefully converting to uh a signup page

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or an email acquisition page uh for a long time on LinkedIn this is what I did to build my business was I said sign up

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for my newsletter and then I had a way to collect people's email and I I collected like 15,000 emails this way

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and I um uh I never even sent a newsletter and I remember people were

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getting mad because like I collected emails for like 18 months saying I was going to like start a newsletter and

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people were like so where's your newsletter bro I gave you my email and like I was like it's coming it's coming and I mean I actually did start it like

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about two months ago now and so it's like actually a real thing now but uh anyways that was a big thing I did

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because I didn't have another another offer at the time I didn't have like a course to sell them or anything else so

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I was like well I'm just going to collect their email so that I can contact them directly later on so that I

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don't have to do this step of the funnel with that user again and that's another

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very important thing to remember is that like you really do want to set things up in place so that you can get people to

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be they can start deeper in the funnel than where they're at so obviously when

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you're at this stage there's going to be a bunch of things that you can do here uh one of the big ones is going to be uh

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AB testing your landing pages I'm sure y'all remember uh in the in the lab on

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Monday we covered uh how to do that with stat Sig on like how to do a blue button

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or a green button or a yellow button and like trying different kind of experiences obviously you can change the

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text and the colors and the designs and all that stuff as well um as a data engineer you probably want to work with

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a front-end person on that unless you're also really good at HTML or something like that but I don't know there's not

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that many data Engineers who are great at HTML um so landing pages you want to

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uh optimize those to try to get them to convert to give you their email that's all that's this this second step is not

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even about anything else it's not about getting them to sign up for anything really it's about can I get a contact

2:07:11
point from them whether most likely email maybe SMS if you're being like a weird company um another thing that

2:07:19
you're gonna want to test here and this is like less of an experiment and more of an optimization is your page speed so page

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speed uh the last piece of experiments that you really want to run on this like first uh initial contact point with your

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customer is going to be responsiveness uh which is like okay uh can we cut our

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conversion by tablet or by um PC tablet

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or phone and does it look good on all of them and that's where like if you

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optimize for page speed and optimize for responsiveness then you're going to get the widest percent of users um both from

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uh the angle of it looking good and for it performing well because if you optimize for page speed that almost

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always means that your page is going to be less data and the less data you send

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the even for Worse devices it's still going to work pretty well even on bad devices or even on like not bad devices

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like old devices it's still going to uh work pretty well and then you can optimize for a wider range of people cuz

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remember that not everyone in the world runs on an iPhone 14 with with the best

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specs right there's a lot like that's not even the average that's like the top 10% of the world uses that so um so this

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is the first piece of the funnel we're at top of the funnel here so that's how you can get down to at this point uh now

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at this point we have an email we have an email for people that uh we can then contact them directly we no longer have

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to pray that the LinkedIn algorithm shows my content to them anymore and we

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can just contact them directly okay so now we have middle of

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the funnel um this is going to be where you are going from signups to uh

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purchases right that's going to be a big uh kind of Step that is the next kind of Step of this puzzle um so purchases are

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going to be uh an interesting one because of a couple different things um

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the experiments and purchase are trickier because of the fact that like you have more risk when you're like

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fiddling with stuff like for example if I was like if I was like hey everyone

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you can get you can get 80% off my boot camp right now like some of y'all in this call would be like can I get that

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discount right and it's like so you kind of uh like some of your pricing experiments can run a risk of upsetting

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current customers so you want to be careful about how you are doing that I even remember like uh during this boot

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camp this is something I think Divia might be on this call but I think someone diva is someone who uh is in

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this boot camp and uh like when I released the self-pace course I recognized that the combined version I

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priced it at the wrong point and I priced it too low and uh and um a couple

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of y'all in the boot camp called that out and you were like why can they get all of the content for less and so I I

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I'm put the I actually ended up raising the price before anybody bought though now and that's why I was grateful for

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y'all because I ended up raising the price a little bit to make all the the to make the pricing structure fair for

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everyone and so that's a very important thing to remember um but at the same time like when

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depending on where you're at like there is uh and where what you're selling

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pricing is a little bit more flexible like for example um at Airbnb right they

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have their own pricing stuff they have ai and ml that sets a lot of prices and so they have to understand elasticities

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so elasticity is essentially the more you raise prices

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the fewer people will buy but also it's also true the other way around the more

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you lower prices the more people will buy and so there's usually a sweet spot

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in the middle there where you optimize for like the integral of purchases times price and that's going to be like where

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you are going to make the most money but not necessarily that can also um like

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you know for example if you're like Rolex I I highly doubt that the the integral for them of like charging

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$50,000 for a watch is the right place to go they like they're not Walmart

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right they're not going for volume right they're going for margin and so uh like it really does depend on your strategy

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as a company as well so uh pricing can be a big thing and also remember on the

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pricing page right so this is something that I did and U I'm curious uh what

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y'all are going to think about this but uh I don't know if y'all have ever heard of like the decoy strategy before uh

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like because you know what Starbucks like a lot of times like how it works is like if you have small medium large like

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the small is four the medium is 550 and then the large is six and then it's

2:12:10
like you get the large every time like because it's like the pricing structure is stupid the pricing structure is

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really weird right and so for me that was like one of I had a pricing strategy I put in place in this boot camp that

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was way more successful than I thought it was going to be actually it was like cuz I thought like initially when I came

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up with like the different tracks like the analytics infrastructure and combined tracks for this boot camp I

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thought that most people were going to buy a single track and no uh I think it's 65 think it's 65% of

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you uh bought the combined track and it makes sense cuz y'all are smart because if you look at the um the per hour basis

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of uh the content um if you buy a single track the content is $30 an hour if you

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buy the combined track the content is $18 an hour so you get a way better deal

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because it's only five because the way you think about it is like it's only $500 more for double the content so it's

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like really in like 1,800 like if we were if it was on the on the on the dollar for dooll basis it should have

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been 2600 but y'all like were were smart and like you saw that like oh yeah this is going to be a lot more content and

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I'm going to learn a lot more by buying the combined track and that was the whole point is that because I wanted people to be invested I wanted people to

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feel like they were getting the best option I wanted people to buy the large right and so that's where when you're

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thinking about pricing and thinking about how you're going to build your products like thinking about like how you want to nudge people to buy

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something uh like like is definitely one of the one of the one of the things that

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is an important thing to do CU I personally think that like that's the right way to go like and like cuz then

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it gives it also gives people options because I also recognize that like $1,300 and $1,800 is like not cheap so I

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wanted people to be able to get in at a lower price point if that like served them so that's kind of the idea behind

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pricing and how you can kind of fiddle with pricing to you know get what you want out of what to change customer

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customer Behavior even okay so now we are getting uh

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deeper into the funnel here uh now uh this point y'all have bought uh so thank

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you like y'all y'all have made it this deep into the funnel of my boot camp and uh you have the pricing structure

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elasticities y'all learn about that most of y'all bought the large and then you want to get them engaged and retained so

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um a big part of that is onboarding uh getting uh a smooth onboarding process

2:14:43
uh some things that I tried to implement there where were like the intake form to get people into groups I also uh got

2:14:50
people onto the GitHub as quickly as I could and also got people like in the Discord chatting and starting to build

2:14:58
community and that was uh I feel like mostly a win um later on uh this is

2:15:04
something I'm not doing right now it's something I'm implementing my developers are implementing this is not as important for the boot camp but for

2:15:10
self-paced people it's very important is uh notifications to kind of if someone

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hasn't done anything in the boot camp in like a week or two we're going to try get them back by sending them an email

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and being like yo like come watch a come watch a lab and kind of getting people more uh retained that way um another

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thing here is around schedule uh schedule is an interesting one I think schedule uh can be very good or like I

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like having a predictable schedule I think that that's a very important thing of like oh we're doing this we're doing this we're doing this and we're like

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going through it and having that kind of piece of the puzzle and then also keeping yall engaged through content right and

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content's a big thing and another part of the schedule piece that I think has been important and it's one of it's one

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of the other things of why I make the Q&A on Thursdays I make that uh

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exclusive is because I want y'all to stay on schedule too I don't want y'all to just be like Oh I'm just going to not

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do the homework or like oh I'm just going to do the homework on the last minute and it's like no I want to incentivize y'all to like do the

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homework like on time so that it feels like you don't have to cram and that like you retain it better and like so

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that you can have more retention like because that is the goal here I'm trying to make you guys better data

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Engineers so that's kind of the idea behind the retention part of this funnel it's a very important piece of the

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funnel I think it's the one of the most overlooked pieces this is the piece where you go from okay you acquired a

2:16:37

customer to you delighted a customer and customer Delight is one of the most

2:16:43

important parts of building a successful product that is I think that's like a Jeff Bezos quote or something like that

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um so we have uh that's essentially the retention part of the funnel then uh we

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have the last piece here we have uh where we go from uh engagement to uh

2:17:02

referral and testimonial so there's a couple things here I think uh of like

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how do you how do you do that right where it's like you have someone who's engaged you have someone who is doing

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the effort they're doing the job they're doing the homework right they're doing all the things they're doing what

2:17:18

they're supposed to do right and they're and doing the program well like to

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really have someone go from engaged to testimonial or engaged to referral is

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you need to impact their life in a way more than just giving them knowledge you need to like really shift them in some

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way like giving them a network giving them a mentor giving them that's one of the big things that I why I added the uh

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the mentorship program into the boot camp is because I know that that is

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going to be at least as valuable as this boot camp is right now because one-on-one

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mentorship is incredibly valuable especially with the talented people that you're going to be uh paired up with so

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that is something to really uh think about and because one of my goals is like I am not here to teach you data

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engineering I'm here to make you a data engineer those are different right those

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are like because one of them is like oh cool that's nice it's like reading it from a book right and other one is like

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no I'm actually doing it I'm actually doing it I'm writing the sequel I'm writing the pipelines I I have the job

2:18:26

I'm making the money right and that's like a very uh those are different very different and uh some other things that

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you want to think about here when you're converting from engaged to testimonial is you also want to be thinking about

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LTV like the lifetime value of that testimonial of like okay this person like loves uh the content and like is

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all about it and it's like how much value am I going to get from that like myself and how does that like how does

2:18:52

that kind of perpetuate into the business and that's one of the things that I think is important to um

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recognize when you are um if you're working in a high margin business like what I'm working in like is like okay

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how much am I investing back into my students and stuff like that because then it's like okay is that like because

2:19:10

the way I look at it like longterm like the mentorship program I actually look at yeah I I I know I'm investing some

2:19:15

money into that but like I actually think I'm going to get paid back so like I'll I I'll make money from it actually

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I'm going to make money from it so um and like it'll be awesome and so and because one of the big things I'm trying

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to do here is I'm trying to build a community I'm trying to build a kind of an apparatus of a way to get people to

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learn the skills learn what they need to learn and then get mentors who can get

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them to the next level because you need mentors who can then kind of because obviously I'm speaking to like 50 of you

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right now and I'm and personally I don't think I would be a good Mentor for all of you there's going to be some of you

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who like you disagree with how I see the world and that's totally okay and like

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but that means that like my career advice might not stick with you as well as someone who is a little bit more

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personalized to you and that's actually what I'm going to be doing um in the next couple weeks is I'm going to be

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adding um a personalized mentorship uh kind of intake form where there'll be so

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like just how we did group matching based on like time zone and stuff like that we're going to have uh some

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mentorship matching as well and that will be another thing that will be uh kind of added into this program uh as we

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go forward here so anyways that is the next piece of the puzzle is to get people to go all the way down the funnel

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and then uh because then they become your brand Champions and then you don't have to Market anymore because at that

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point you have so many people that love what you do and they like they they have such a profound appreciation for what

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you're doing and for what you did in their life that that you the the Boot

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Camp or whatever thing you're making sells itself at that point because you have Word of Mouth and you have you have

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that person tells their friends and that person tells their friends I'm already seeing that I know y'all are telling your friends because like I'm not doing

2:21:05

any marketing right now and I'm still selling self-paced courses I'm still I'm still selling like a couple self-paced courses a day and so like I know y'all

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are doing it right now even right so thank you thank you for marketing for me I appreciate it a lot so anyways that is

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the funnel one of the things I'm trying to talk about here with funnel stuff is

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you'll notice that like a lot of what I talked about there is um there's metrics

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every single one of those steps has a metric that you can measure right and just like what I was talking about

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before where it's like if we go all the way back to Impressions like okay or or we go back to this slide here right so

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we have the top of the floodle here of Impressions and like how many people actually make it down to this bottom one

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right it goes from like Millions to like tens and that's like a a steep drop off

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but then that's how you find your you find your tribe and you find your people and you find the people who really um you know really care about what you're

2:22:00

doing so anyways that's kind of like when you're thinking about how to be a product manager this is the kind of

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stuff that you should be thinking about as a data engineer as well because one of the things is is like if you're doing

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product analytics and you're a data engineer you should be able whatever metric you're coming up with you should

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be able to come up with a cohesive story of like where in this funnel does that

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metric play right I'll just give a couple examples here real quick so for example I worked in notifications at

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Facebook so notifications uh is uh part of the retention step right because

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that's how you bring people back that's how you get people engaged and that's how you get people to uh really keep uh

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using your product right another one that I worked on at Facebook was friending so friending is going to be um

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also in the retention step right because the more friends you have on Facebook the more likely it is that you come back

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so another area I worked on was npx which is new user experience new user

2:23:01

experience was actually more in this like signups and email acquisition because that was a lot around like measuring the effectiveness of ads but

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then it was like it kind of bled between the two it was between uh the email acquisition and the engaged retained

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because Facebook conveniently doesn't have this purchase step because it's free right so uh they they go

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immediately from sign up to uh to a retention problem and they have a purchase step on the other side right on

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the ads side um so and that's a great example of like for them it's like when

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when an Advertiser purchases an ad that's going to be the middle of this right and that's where Facebook is a

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crazy crazy product because of the fact that they actually have two funnels right they have a funnel for users and a funnel for advertisers and they have to

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deal with both of them and they have like this kind of like two-sided thing some of the things I like about about this boot camp is that it's just one

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funnel right cuz the other side is just me I I've thought about it in the future of like how I might want to do this

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where I have like a set of Educators and a set of students and like kind of essentially taking kind of the

2:24:03

platformization

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likely a waste of time that's like straight up like that's that's my perspective right is like if you're not

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like building something that fits into this funnel it's probably a waste of time there are some minor Exceptions

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there but then like you wouldn't be a product data engineer anymore like for example if you're working on like

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infrastructure efficiency where it's like you're measuring the efficiency of the infrastructure or like how quickly

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or how fast things are made or how much AWS dollars you're spending that really

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doesn't fit into the funnel cuz it's not really a part of the user experience it

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is in the fact that it it raises essentially what it does is it raises the uh cost to acquire a customer like

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the CTA cost to acquire I that's also called an action but it's kind of both

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so in that case it would uh impact the signups right because you would have a kind of a a cost to acquire that

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customer and then that would be the metric that the in the additional infrastructure cost would then impact in

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this funnel so that's a big thing to remember think about everything that you do in

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product analytics always be thinking about funnels because if you're thinking about these funnels you're going to impact the business way more and then it

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will also help you put your work into context and help you build more robust data models that can help illustrate

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this funnel and illustrate this user journey in a more uh Salient and

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effective way so yeah product Analytics is tough but like if you think about it

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as a funnel it's a little bit easier okay um one of one is like how to

2:25:57
think like a product manager there's really only one question that you really want to be thinking about here as a data

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engineer there's more in the product management space than this but at every step of the funnel thinking about what

2:26:10
is causing pain what is sparking joy and if you can think about that of like what

2:26:16
is causing pain and what is sparking Joy through every step of your user journey
2:26:21
and you try to optimize for joy and minimize pain then you will be a lot
2:26:27
more effective product manager and uh I'm going to go over some more examples like within the boot camp I know this
2:26:32
like presentation feels kind of meta where I'm like I'm giving a presentation about the boot camp in the boot camp but
2:26:38
uh I I hope yall are getting some value out of this so let's talk about some examples here from the boot camp so from
2:26:45
that top level right so uh I'm talking about Impressions or maybe uh I'm
2:26:50
talking about the prospective student uh so one of the things that sparked joy in some of y'all was my content on LinkedIn
2:26:58
Tik Tok or Instagram about data engineering and y'all probably were like wow I'm learning a lot I I think this
2:27:04
guy knows his stuff I think I can I can trust him with doing uh with teaching me
2:27:10
and that was a big thing that y'all did and some of y'all even uh took it a step further and you wanted deeper Knowledge
2:27:16
from me and you signed up for my newsletter uh it's some point in the last two months and that's where I now
2:27:22
have your email and I was able to uh connect with you on a deeper more personal level so these are examples for
2:27:29
me of things that I did right uh that sparked joy that brought customers to me
2:27:35
that were a big part of the user Journey that helped me uh build a bigger and
2:27:40
more successful boot camp so then you have the new student so
2:27:45
when you paid your thousand bucks or whatever your thousand is dollars uh one of the things that people got was
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you got immediate access to all of the videos um you could easily look at I
2:27:59

mean there was I I put I I started at the beginning of the boot camp there was I think there was 10 I had all the the

2:28:06

the first two weeks of data modeling from V1 and all the interview uh presentations that I did and so you got

2:28:13

immediate access to that content and that was something that probably sparked joy in a lot of you because you're like wow my got my money's worth and uh there

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were on the other side was the hiccups around getting y'all added to the GitHub

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and getting y'all added to the deeper level of the content and getting you on Discord and that stuff not being

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automated and that being like a very manual painful process that was

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something that did not spark Joy I know I'm sure y'all have seen that Meme of that like Asian lady who's like this

2:28:43

Sparks Joy this does not spark Joy you know what I'm talking about like I like I always like when I'm in my product

2:28:49

manager like head space that Asian lady is like in my head the entire time I needed to have like I was trying like I

2:28:55

should have put that Meme in here that's oh man that's that's going to be in the next in in in V3 that is definitely

2:29:01

going to be in this presentation so you think of like okay I'm thinking about the new student this is one thing that

2:29:06

sparked joy and one thing that sparked pain okay what about engaged students um

2:29:12

so I think another thing that sparked Joy was uh getting everyone into groups so that you could have a kind of a group

2:29:17

of people that you felt were going through the same trials and tribulations as you and so

2:29:23

you could feel less alone and then also uh you feel happy when you're going to

2:29:28

be matched with a mentor because you feel like this whole boot camp was worth it because you're like wow I can't

2:29:34

believe I listen to Zach talk for 60 hours that's a lot of Zach and um and

2:29:41
now I get to have a mentor who's going to help me maybe get a referral to places or learn about interview skills

2:29:47
or whatever things you want to learn from that Mentor you can you can get that from them and uh I think a place

2:29:53
that I messed up um in uh for the engaged students which is going to be most of you is uh I think this boot camp

2:30:01
has been a lot I learned I've learned I mean this boot camp has even been a lot for myself like and coming up with the content and talking with you all every

2:30:08
day and uh one of the things I've learned is that like I think in the next boot camp I will scale it back just a

2:30:14
little bit I think that I will not do quite as many lectures it will be uh I think still six weeks but I'm going to

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condense some of these lectures and and com back compact them down and uh kind of focus more a little bit deeper on

2:30:28
quality and um not quite as much on quantity because I think that will help y'all feel less overwhelmed from the

2:30:34
intensity of the boot camp but on the flip side I appreciate y'all showing up and uh coming to all these lectures

2:30:39
because I think that that is also it shows that you can do hard things and uh I I really do appreciate uh your

2:30:46
engagement here so that's uh kind of when I was thinking about the pain and joy of my boot camp students that's a

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big thing I was thinking about and then uh on the last one it's like okay I think uh for the referral and testimonial I think it's uh when one of

2:30:59
my students lands a better job from the skills they learned here uh they're going to be very happy they're going to

2:31:04
be very grateful they're going to freaking tell all their friends and they're going to like love it and and

2:31:10
that's going to be like the big part of this user Journey because I'm trying to build a sustainable business here where

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like I change lives every six weeks or like or not every six weeks but a couple times a year for six weeks I change lives right and I can get people to um

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like really level up and uh you know get inspired by how they can kind of build

2:31:29
things but so the idea here is you can see one of the things the skill set here

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is I'm a data engineer right I'm not a product manager I have never been a product manager I that's not my cup of

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tea uh most of this skill set like where I learned this skill set is by building

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startups and failing where I you know I learned this from like building the magic the Gathering app and from

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building art lineup and all these other startups that I created and failed at and I learned a lot about like customers

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and the customer journey and joy and sadness and all that stuff from that

2:32:04
angle and and you do want to like these are both important like you do want to

2:32:10
like have this strategy so I just gave you my strategy of like how I'm thinking about the boot camp and how I've been

2:32:16
thinking about being how I've been a product manager throughout this boot camp journey and not just cuz I could

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have just been a um a lecturer right and been like okay this is what you bought

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thanks spy right and been like kind of thinking about it from that angle of like okay I like I'll give them exactly

2:32:36
what they asked for and then and that's it and and not try to Delight anybody and I don't know that's not the way to

2:32:42
go though that's not how you uh that's not how you build a legacy but uh that's like kind of like that's where being a

2:32:48
product manager though and like or not necessarily being a product manager but about like thinking about things like a

2:32:54

product manager can make your data engineering skill set a lot better because now each one of these things

2:33:00
every single one of these things is a metric right where it's like here it's like okay like one of these metrics is

2:33:06
like okay how many people are converting from LinkedIn Tik Tok and Instagram right and how many people are signing up

2:33:11
to my newsletter easy metrics to track right okay here is like okay how many people are buying the boot camp and then

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watching a video immediately right and then also how many people are buying the boot camp and then messaging me about

2:33:23
not having access to GitHub right within a day or X number of days or whatever right those are two metrics easy to

2:33:29
track right here okay how many people are doing the group work right that's another metric that we can easily track

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okay how many people are actually showing up to the mentorship sessions that is something that I am tracking I'm going to have all my mentors track uh um

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and then also how many people are dropping out of the boot camp that was something I actually had an an an an

2:33:47
initial indicator that the boot camp might be too intense uh in week two when I had that refund deadline and you know

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I think like about eight people dropped out and so uh and that was my I was like wow this yeah this is going to be a lot

2:34:00
metric right uh here um how many people land a job and change their lives another metric because I know if they

2:34:06
land a better job they're going to tell me about it and I'll have that metric obviously that will be like a that' be a crazy data pipeline right where it's

2:34:12
like like I have it like parse all my DMs and it's like an llm model to see like oh this person got a new job

2:34:18
because of the boot camp and then it like adds a row right that would be crazy that would be so crazy but um

2:34:25

anyways metrics definitions funnels thinking about things like a product manager these are how you build

2:34:32

beautiful amazing products and this is how you make a business better right or make a business from nothing that's what

2:34:38

I did I mean I made this business from nothing and like I know that this business is going to be wildly successful so and like and a big thing a

2:34:46

big part of that is thinking about each step of the user Journey and how they

2:34:51

are feeling think about emotions empathy it's important

2:34:57

stuff okay so um we're almost uh like we're almost out of time here uh at

2:35:03

least like this is the last slide uh this is what we're going to do for the homework this week is uh you're going to

2:35:08

pick a product that you love using whether that be uh um like LinkedIn

2:35:14

Spotify Facebook Instagram whatever uh

2:35:20

so I want you to do that I want you to describe the user journey of that product uh from when you signed up like

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what about the product when you signed up were things that you liked and like why did you sign up initially and then

2:35:34

also uh why are you coming back why are you staying engaged and also if you

2:35:40

spend money like why like what what um what are the things that cause you to

2:35:45

spend more money like uh on that product uh that the like I want you to talk just

2:35:50

in detail about that I expect like a couple paragraphs this is not like a small amount of work here uh and then

2:35:57

the last step of uh the homework for this week is I want you to then describe three experiments you would like to run

2:36:03

on this product to see if it would improve the experience so and this is going to be uh you're going to detail

2:36:10

out the allocation of each test cell and the different conditions you're testing like for example I'm going to do 50%
    2:36:17
test 50% control and I want to change this aspect of it or this aspect of it
    2:36:22
and try to be creative here don't just be like I want to make the button red or blue not like the basic examples I was giving in the labs but like really try
    2:36:29
to put on your product manager hat there and think about like oh this is what I'm
    2:36:35
going to do differently or I'm going to do uh I want to change this aspect of it or like I I I've always been annoyed by
    2:36:41
this feature and I want to change it in this way and then the last thing is like I want a hypothesis from each experiment
    2:36:47
about like what you think would change or which metrics you think would change like the leading and lagging metrics and
    2:36:53
just assume that you have access to every metric in the world because uh you're probably going to pick a product that has all the metrics in the world
    2:36:59
anyways so uh and just think about like which metrics you think are going to change like either drop or raise and
    2:37:05
really think about like potentially what what could go wrong in the experiment as well uh so that's going to be the
    2:37:13
homework for this week congrats on getting to the end of the day two lecture I'm so happy that you're taking this time to invest in your knowledge
    2:37:19
and and getting better at data see you at the next one [Music]

<p align="center">English (auto-generated)</p>

All

From Data with Zach

Data science

Databases

APIs