

[Transcript] All-In with Chamath, Jason, Sacks & Friedberg / E126: Big Tech blow-out, Powell's recession warning, lab-grown meat, RFK Jr shakes up race & more

I can't wait to talk about lab grown meat.
I had been trying to get people to.
No, oh, please don't let's not get cancelled.
The four of us are functional again.
We'd like each other.
We enjoy with the four to doing the show again.
Everything styled in.
Is your lab grown meats that use hormones?
My lab grown meat was a little.
Let me ask you this about your lab grown meat.
Do you have this age?
No, no, no, no.
You know, I was told that my lab grown meat was a little.
I've injected some flavors of tobacco, black cherry.
Some notes, some notes.
Or Simmons.
For Simmons.
So let's go to big tech earnings.
Google stock is up 5%.
After beating on the top line and bottom line estimates,
some high level takeaways.
Google announced a \$70 billion stock buyback plan.
And that their cloud unit was profitable for the first time
in its history.
As we mentioned last week.
Sundar officially announced that deep mind was merging
with brain.
This is kind of controversial because it's really hard
according to some sources for Sundar to get all his lieutenants
to work together and row in the right direction.
Google's Q on search revenue up year over year,
2% down, 5% quarter over quarter.
Just kind of to be expected because of seasonality.
And because we're in a down market right now,
obviously with the recession.
YouTube down 2.5% year over year,
down 16% quarter of a quarter.
Other bets, which is like Nest and some other products
down 35% year over year.
Net income, \$15 billion.
Any thoughts?
Freberg on what is a mixed quarter by Google?
And I guess the wider macro environment.

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What was so striking about the earnings call is not necessarily what was presented, but what was not presented, which was a stronger voice and a strategic plan going forward for dealing with two major issues of the company.

One is the operating cost model.

And the second is the AI strategy and the response to this evolution in AI.

I've heard from a lot of folks that the AI strategy in particular, it's almost like Google already has this in the bag, but they just haven't kind of let it out of the bag.

It's like they've got a Tasmanian devil and they're ready to go with it.

And there's, from my read, an incredible amount of confidence that there's something that's going to happen.

And a set of things that are going to happen, they're going to be very profound and powerful.

I even heard some anecdotal stories about, hey, you know, we don't have this feature in this product, but chat GPT does.

And then people basically showed up to this meeting and there was all this debate about, well, we can't let it out because we're not sure, you know, the classic kind of like we're scared of doing wrong versus leaning forward and taking risk.

Don't be evil you're referencing.

No, it was just more about regulatory concern and getting things wrong and making a mistake.

And so there's this total fear of like, again, you know, regulatory and fear.

So someone kind of slammed the table and said, let's just put it out and the next day they put it out.

So there's definitely a cultural change happening internally is what I've heard anecdotally, but what was really missing, which is what Wall Street needed to hear what investors and shareholders needed to hear is what's the strategy there?

How are you going to compete?

How are you going to resolve what's going to go forward?

And secondly, what are you going to do about the cost structure of the company?

Because everyone else, you know, we contrast to meta being up 11, 12% after hours with their cost-cutting model

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and demonstrating that they're going to start pulling cash out of this business.

Google's top, you know, kind of top story was, hey, we're stopped serving at peanut M&Ms in the cafeteria or something ridiculous.

And, you know, that doesn't really address the real structural question.

So I think the stock buyback, the \$70 billion stock buyback is an authorization to repurchase.

It's not a plan to repurchase.

So it's unclear if, when, or how that capital does actually get deployed in the market to buyback stock.

And so there is also this big kind of shareholder sentiment of being let down, that there isn't an improvement in either cash coming out of the business or in cash being used in a smart way with the business.

And it was the silence in the earnings call that I think really stunned a lot of people, which is why you didn't see a lot of stock movement despite the actual business numbers being better than expected.

And so there's a lot that Google, I think, still has to catch up to with respect to their peers, both on a product and strategy point of view, but also on a cost cutting and a communication of that cost cutting point of view to the market and to the street.

Otherwise, shareholders are going to start to lose faith if they're not already and are going to start to put their capital with other folks who they feel are better leading and leaning into this new evolution of technology like Microsoft and Apple and Meta, which is really where those big capital allocators end up picking stuff to go.

One final thing I'll say, it's extraordinarily important to note that I think Google has such an incredible AI advantage over Microsoft and Microsoft is almost solely dependent on open AI, this small startup company and all of Bing Chat is powered by it.

And Microsoft hasn't built out the infrastructure, the team, the rigor, the depth, the models that Google has.

And Google made a few strategic blunders.

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You know, they shouldn't have been as open with the transformer work that they did and shared that publicly. It certainly enabled open AI and others to compete. But Google certainly has an incredible set of tools and capabilities that is leap years ahead of Microsoft. They're in a position to really compete. They just have to have the will and the leadership to do it. Slam the table.

Say, here's we're going to stop wasting money and we're going to start leading and driving this industry forward. And this could be a quick turnaround story for this stock and for this company.

And I hope it'll happen.

Chamath, what are your thoughts on Google's leadership specifically?

Is Sundar the right person to run the company going forward?

Does he have the founder authority to get the ship

and to get the lieutenants all kind of rowing in the same direction?

Does it need to be a leadership change,

which is the big discussion of topic in Silicon Valley right now?

I think he's very capable.

That's an amorphous organization

of so many different competing interests.

The thing that doesn't add up about the Google earnings release,

but then also what Friedberg just mentioned is

there was this article that kind of tried to paint Sundar

as sort of a caretaker CEO, right?

Where Larry was the actual shadow CEO.

Well, if that's true, you know,

Larry has more incentive than anybody else to kind of force change.

And there was all these kind of like gripes and complaints

that were articulated.

And I don't put much stock in all of this stuff.

I think that he is the right person for the job.

And I think what they have to do is just do the simple basic things.

Like it doesn't take a CEO change for a board of directors

to have the emotional wherewithal to authorize a 15 or 20% reduction in force

for a company that is so profitable

that clearly is not yet humming on all cylinders.

And so you don't need to go through all of this drastic change

to do these simple obvious things.

My takeaway across all of these four big companies

is we are in a really unique moment to observe something

that may sound controversial or hurt people's feelings

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that like these companies.
But I think we're now well past peak big tech.
Their valuations may still go up
because they generate such an enormous amount of cash flow.
But these are exactly those kinds of businesses now.
They are X growth, large cash flow businesses.
Blue chip, you might say.
Well, they were always blue chip.
But the way that they grow is not through innovation.
If you look at Google, Facebook, Microsoft and Apple
and ask yourself when was the last hugely disruptive thing
that they've created your hard press to find something
that was even done in the 2010s.
Yeah, actually, that's a good thought.
I mean, the iPhone for Apple.
iPhone was 2007.
Yeah, Microsoft was in the 1990s.
Google was in 1998 with Core Search.
Maybe there was Maps and Gmail in the 2000s.
Chrome, Android, they bought some of that.
Facebook, it was the core service that we built in the 2000s.
And then they acquired brilliantly, right?
So I'm not saying that they didn't acquire well.
Yeah, my point is that core organic innovation
hasn't been there for a long time.
So this is a moment to just be reflective of the fact
that these are some incredible companies
with ginormous cash flows.
But now you've had this foundational platform shift
which exposes the fact that they really aren't good at innovating.
And at times when they've tried to organically innovate,
they've massively misallocated capital.
Either through this would be the example
of either through a bloated balance sheet.
So someone claimed that Google overspends
or through just pure misallocation by starting projects
that just are not large but consume large amounts of cash.
That would be the Facebook VR example.
But in all of this, I think when you cut staff and expenses
as a way to meet and beat
and top line growth is in the low single digits,
it's an important moment to recognize that these companies
have now transitioned to being cash cows.

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And if you look at sort of how financial markets value cash cows, they're very valuable.

But it's not where you look for growth.

And so in a world where rates eventually get cut and we start to come out of a recession, it tends to be that other people get rewarded.

So that's an idea that's worth-

And adding to your point here, they're not allowed to acquire anything.

It's Microsoft's acquisition-

The acquisition thing, dead.

Dead. So they're not going to be allowed to buy stuff.

So then you're right.

What is the growth here?

They're not able to innovate.

I think these companies are X growth, which is why they use their cash flows to do what?

Borrow money cheaply to buy back stock, to manipulate their equity, right?

You can manipulate and overcome dilution.

You can manipulate earnings per share.

You can manipulate the number of shares outstanding.

And so just by the nature of that whole game, a bunch of passive investors will end up buying more, which helps the active investors who own that stock.

So it's a game.

So if we're not in the world-

Financial engineering would be the,

I mean, the most charitable way to say it.

We're in the financial engineering phase, which is fine.

And by the way, you can make a lot of money.

Facebook's up 90%.

So there's a lot of meaning just this year.

Oh, yes.

So there's a lot of room for financial engineering,

but it's not where you need to look to figure out

where these big improvements

and uses of this next generation platform technology are going to come from most likely.

Saks, is this a fair assessment in your mind

looking at, you know, the major tech companies, the fangs?

Yeah.

I mean, their growth is down to single digits.

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So I think Microsoft had 7% year-over-year revenue growth.

Google was at 3%.

I think Facebook was-
4%.

First quarter sales rose 3% from a year earlier.

But at least that was an improvement

because it's actually gone down for three straight quarters.

So yeah, but you're down to, you know,

a single digit year-over-year growth rates.

Nevertheless, most of these companies beat expectations.

So Microsoft shares rose 9%.

Meta jumped 12%.

Might be up more now.

And I guess Google got a little bit of a bounce.

And they all gave a pretty upbeat forecast.

The only one that wasn't upbeat was Google,

where the CFO, Ruth Porat, said that the outlook remains uncertain.

But all the other ones seem to indicate that things are going to get better.

So I think what's interesting about that is just the mismatch that we have between how well these companies did in this quarter versus how uncertain the rest of the economy is looking right now.

And maybe the Fed's behavior?

Yeah.

So maybe this is the flip side of what Chamath is saying,

is they're not growing very fast,

but they are profitable machines generating a lot of earnings.

And they seem to be pretty immune from what's happening in the economy right now.

Well, at least that's what they're saying.

Now, you're right.

In a parallel track, there was an interesting interview that Powell did.

So Jerome Powell gave an interview.

It was actually kind of like one of these hoax calls

where a couple of people pretending to be

Solinsky engagement and interview.

Oh, my God.

That was crazy.

You might be going to explain that reference.

Oh, my God.

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Yeah, apparently they've done this a number of times where they've gotten, you know, major leaders. I think they did this to Macron's mother people where they pretend to be Zelensky and they do an interview. It's like Oli G. Yeah, but they played it straight. I don't care that he was fooled into giving the interview. It's like, who cares? But some of the things he said were really interesting. I mean, number one, Powell said that the economic outlook for the year was looking pretty uncertain. And he said the most likely scenarios were either sub 1% growth. So staying out of recession, but just barely. Or he said going into recession. So he thought that was roughly about equally likely. He admitted that we had the worst inflation of 40 years and that's why interest rates were necessary. And he said that it was necessary to slow the economy in order to combat inflation. And he then even went further and said that it was necessary to cool off the labor market and even to cool off wages specifically because that's how you combat inflation. That's the only thing we know how to do in a situation like this. So I think this is certainly a political mistake for Powell to say that his objective here is to hurt the wages of the American people and to basically cause a recession. But that is his view, apparently. And I think that we are headed for, it seems like a recession. I'm a little surprised that the earnings reports for these tech companies are so good because, or at least their forecasts are so good. Well, they can cut spending. And we talked about this last year when we were trying to predict what would happen. I remember saying, well, I think Chamath and I were talking about this and I was like, well, Chamath was saying, hey, earnings are going to go down and there's a PE. And I said, well, what if they just stop spending or they make a lot of cuts? Well, here we are. People are just saying, you know what?

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We're going to cut our way to, and do stock buybacks.
And that's another way of financial engineering
to route around the Fed, right?
And to make the stock go up.
Worked incredible for Facebook.
I mean, my Lord, they were at \$91 to share
and now they're over 200.
Right, but just to bring it back to the economy.
So look, I think we agree that these tech companies
seem to be pretty immune.
They've got a large cushion in terms of their ability
to continue generating earnings because of all the bloat
that actually gives them like a margin of error
where they can just keep cutting to prop up earnings.
I'm a little surprised that they think their revenue forecasts
are going to be so positive
because again, they were guiding upwards generally.
So they seem to think they're not going to be impacted
by the recession and maybe they won't be.
Again, I think what was interesting from Powell
is the way that he seemed to think
that the only thing we know how to do,
this is basically what he said,
the only thing we know how to do in the situation
with inflation is to kill the economy.
It's a slow the economy
and specifically to kill jobs and wages.
And that was pretty remarkable to me
because there are other things we could do.
Such as?
Okay, well, one thing is that you don't have
to print so much money.
Cutspending austerity.
So yes, our fiscal policy remains completely out of whack.
We're running \$2 trillion annual deficits right now.
Past COVID.
So he could have said,
listen, we could get off this reckless fiscal policy
and be more restrained, but he didn't want to go there.
The other thing you could have done
was address the supply side.
One of the ways that you can reduce inflation
is not just to kill demand.

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You could actually affect supply chains.
So like cost of energy, for example,
energy is a huge input into the economy.
And one of the things that happened
at the beginning of this administration
is they made it much harder to drill for oil and gas.
And I think Biden sort of reversed course on that.
At the State of the Union, remember he had that line
where he said, we can't get off oil and gas for 10 years
and the audience started laughing.
But in any event, the point is just that
it's too little too late.
They could have done more on energy to keep costs low.
And then there's a whole bunch of other critical inputs
into the economy besides labor.
And what you could do is I think you could go category
by category and say, how do we get the price of these key
inputs into our economy down?
How do we resolve supply chain bottlenecks?
How do we make it easier to get access
to whatever the key commodity is?
And I think there's things they could do
if they're just willing to work at it.
Maybe this isn't the Fed's job.
This is more the administration.
But what you could do is say, listen,
we're gonna make it easier for people to produce
and create supply.
And if you have a higher supply of goods and services,
then you will start to bring inflation down
because inflation is just the amount of money
in the system divided by the amount of goods and services.
And when the amount of goods and services hasn't gone up,
but the money supply has gone up tremendously,
you're gonna have inflation.
And that's why I think it's a little bit misplaced
to be killing demand the way they're killing it is
because fundamentally the problem here
is they flooded the economy with money
both through government stimulus
and through quantitative easing.
And then also they made it harder
on the supply side to produce, certainly with energy.

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So it seems to me that the approach they're taking for us to get out of this, it's like taking a meat cleaver to the economy or a sledgehammer really. And it's the most violent possible way that they could solve the problem they previously created of too much inflation. And the other thing obviously is jobs. We're still sitting here with close to 10 million job openings. And the thing I'm hearing from the streets is that unemployment hacking is become a high art. And so labor force participation remains low. It's nowhere near the historic highs. We have been very permissive during COVID for good reasons to give people very extended benefits. People have now learned is my understanding and this is something that's happening on a regional level, state by state level. People are learning how to hack unemployment and not going to work. And people are just not taking the jobs that are open which are service industry jobs. Americans don't want to work them. We don't want to let people into the country. We got record low people coming into the country. It seems to me that would be a much more productive way to do this, right? Yes, yes, I think it's an excellent point because exactly what you're doing there is addressing the supply side which is you're unlocking the supply of a key input into the economy which is all this unused labor. It's all these people aren't working. You're right, the labor force participation rate is still much lower than it could be. So if you get more people into the economy then that helps alleviate the cost of labor. It helps fill these jobs but it doesn't kill the economy. So it would be a much more positive way to address this. So I just think it showed a lack of creativity for him to say that the only thing we can do in this situation is not just to raise rates.

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He did say that but to go further
and cool off the job market, increase unemployment
and cool off wages.

I mean, and that's going to be a very unpopular thing to say
I think because what you're basically saying is
you're going to hurt the wages of the American people.

Who wants that?

Here's the chart for job openings.

We thought this would collapse.

It went down certainly as we, you know

I don't want to obsess over macro stuff

but it's still way up there.

And so the fact that we can't get people to take these jobs

I don't know Chamath, what do you think about the employment

and participation situation

and how that might unlock things

I also wanted to know from you Chamath.

This concept of the Fed is reacting to data just so slowly

and then you have these companies

that maybe are more nimble

and they have better data than the Fed.

I think that that's a truism

and I don't think anything about that is going to change.

I mean, I think we talked about

how these folks calculate non-farm payrolls

or how they calculate CPI.

It's incredibly outdated, right?

It's people with clipboards walking around talking to people

and checking boxes and filling out forms.

Can that change?

Probably it could.

Will it change?

It probably won't.

And so they're going to focus on the most simple

but most powerful measure that they have

which is controlling the money supply

and of what Saks talked about.

So they're going to manipulate the money supply

to either put more liquidity in the system

in which case markets go up and asset prices go up

but then inflation goes up or constrained liquidity

which then causes markets to go down, asset prices to go down

and inflation eventually to go down.

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The thing that we're facing today when you look at this labor market chart is a couple of things that I think we've talked about before and I just want to reiterate them which is you have to remember that we are in this new world order which is the ex-China world order. And in that there is no more unitary economy that can do things cheaper, faster and better globally around the world, right? So we're going to near shore or on shore all kinds of things that used to be done by the Chinese. They'll sit in Mexico or they'll sit in Central America. Maybe in some cases they'll sit in Canada and all of that will feed into the United States. The problem with all of that is that that will keep costs higher because it'll be naturally more inefficient. It will naturally take more money and that will naturally cause the prices of those things to be higher which means that terminal inflation I think is just roughly higher. As a result, I think that more power if you will goes to labor. So in this constant tension that we have in an economy between labor and capital, the people that own the factories or the businesses and the people that run them and work inside of them, we've been in this position where the pendulum has swung so far towards capital, the owners, the shareholders that all this financial engineering has tremendous upside, right? That's why companies engage in it. But when you show that chart, Jason, what it means is it's just really hard to find people and so the only way you're going to get people off their butt to go into work to sit in a chair to do a job that you need them to do is to pay them more. And in finding that, wages will have to go up. The counterbalance of that is what AI will do which I think we all agree is- I was about to say that is the key. Which is massively deflationary. So that is going to be the tension that we're in now for a really long time as we explore this. I don't know if you guys saw today but Sequoia

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led a \$20 million round in this thing called Harvey.ai.

The legal, yeah.

Which is like a legal super wizard for law firms.

Yeah, we knew that was coming.

And my partners and I were debating it.

And what we thought of was, well, how much do you pay out of the \$800,000 an hour that you charge to Harvey.ai?

Maybe you're willing to pay 5% or 10%.

But then the reality is that one of the most powerful things it does is it's able to go into Westlaw, find all these cases and say, yeah, this is germane to the thing that you're working on right now.

That's a very useful thing.

But the N plus first law firm will also use that tool and instead of charging \$800 an hour, they'll say, well, we'll charge 600 bucks an hour and we're still willing to give you 5% or 10%.

So I just don't see a world where on the one hand, physical labor will continue to be more expensive.

They'll demand more and more money to do the job that they're asked to do.

And the knowledge work will become increasingly more deflationary because so much of it will be automated by AI that those folks will charge less and less.

And there's gonna be attention there and I don't exactly know what's gonna happen.

I did a couple of experiments this week.

I've been rolling out my sleeves and playing with these tools.

It's pretty amazing.

And I've been trying to use them for actual tasks in our companies.

What have you learned?

What did you do and what have you learned?

So I got on the open AI plugins.

Greg, thank you.

I sent him my email and he got me onto that.

And you can connect it to Zapier.

So I have two projects I'm working on currently.

One of them I was, since I'm raising, so raising LaunchFront 4 and I'm actually going out to people not just taking inbound.

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I was like, hey, can I get the names of all the major LPs and start doing some research there, put in a table, stuff that Sax did when he does blog post. But then I started connecting it with finding people's Twitter handles, finding their LinkedIn profiles. And then the next piece I'm working on is automatically following them, DMing them on Twitter, let's say, or following them and doing an in message saying, hey, we haven't met. Here's the deal memo for my next fund. We'd love to get together. This is sent from Jason's AI script. I was going to actually tell them, but here's my real email if after you read the summary of the next fund you want to meet. And then I was, I'm going to pair that, and this is a piece I'm going to probably need a developer to do with our internal LP database to not email people who are already duplicates. And then inside with newsletters, I have it building a database of every newsletter we've ever sent, the writing style, and then I'm having it go find in real time news stories that we should be including in the newsletters which I think will make the writers right now a third more productive. But these are things that would cost 40, 50 bucks an hour, 30 bucks an hour for, you know, college educated Americans and Canadians. And I have already figured out and I'm not a developer anymore. I had to script them and I'm actually thinking about learning to code again just so I can do this myself. And so on Saturday, I'm going to do a little coding with a friend of mine and get back up to speed on that. I think about 30% of what knowledge workers do right now is possible.

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So I put every single person at both companies
on chat GPT-4
and the playground.
About 30% of what knowledge workers at both firms can do
currently
is doable if you can figure out
and this stuff is not perfectly scripted yet.
So I've been doing some stuff in travel as well
playing with the kayak
interface,
Expedia interface, etc.
to look at travel planning and it's pretty good as well.
So it's,
it's,
this is the real deal folks.
I think by the end of this year,
30% of knowledge work could be done by this.
And then additionally,
on Monday,
I went back to work in person
and I went to,
I hosted our accelerator in person
and then I hosted Founder University in person
in the city.
The city was absolutely dead.
But we had a hundred people fly in from around the world
for our Founder University
and a lot of them are working on AI projects.
And what's very interesting is like,
there's this big debate going on
Friedberg between
is this going to be built into chat GPT-4
or Bard or Po or whatever it is
or should I even bother,
so should I bother building,
you know, a verticalized app?
And it turns out like,
I think you should do the verticalized app
and you're going to be able to
put together multiple of these AIs
that have different specialties.
So I'm super stoked about it,
but I do think if you're not using this,

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if you hear my voice right now
and you're a white collar worker,
a knowledge worker and you're not using this
this year and getting up to speed on it,
I think you'll be out of a job within the next two.
Geez, wow.
I just don't think you'll compete.
It would be like trying to compete
without knowing how to use Microsoft Office
20 years ago, right?
Like, could you work and not know email?
Remember when we came into the workforce 30 years ago
and some people knew Office and email
and web research and other people didn't?
Those other people retired.
They were phased out.
If you didn't know how to use a computer
and type and use an Excel spreadsheet
or do a PowerPoint, you were done.
I think there's two possible ways
you can interpret what you're saying.
So in terms of the economic impact.
So one is that you could say,
well, AI is going to do 30% of the knowledge work.
Therefore, 30% of the knowledge workers
are going to be put out of work.
I think a different way to put it would be
every knowledge worker can get 30% more work done.
Correct.
So if that's the case, then they're more productive.
And we're just talking about the problem
of how do you increase real wages in the economy
without having inflation?
Well, the way to do that is for every worker
to be more productive.
So if every worker is 30% more productive,
in theory, their wages should be able to go up
by up to 30%.
That's how you get wage growth.
Now, maybe there will be some companies
that don't need all those employees
because now they're able to get, you know,
whatever, a third more done.

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But there will be other companies who can hire them.
They can go off and do other jobs for other companies,
especially when you've got this backlog of,
like you said, eight or 10 million new,
you know, jobs that are unfilled.
Yeah, those jobs are all service, though.
You know, they're not.
You're actually going to have this big group
of knowledge workers where there's just nothing
for them to do.
Oh, no, no, no.
I agree with you.
But I think there's going to be a group of knowledge workers
who do not embrace this and do not make the transition
because it is, it's going to require an upskilling.
Like, I think you're actually going to need to know
how to do some basic programming and coding
to really take advantage of these,
at least like scripting level stuff.
I don't know.
It's pretty easy to use.
I agree with you there.
Well, writing a blog post.
But the date, the example I gave of like taking the LP database,
sorting it, you know,
it's not quite there.
It's not hard.
Maybe it will be.
This is like a chatbot.
It is.
Like, I think it takes like level two programming skills.
No, it doesn't.
No, you don't know how to program.
You just have to know how to prompt it in natural language.
It's the opposite of need to learn how to code.
The thing about the thing that makes coding hard
is that you have to learn the specific commands.
It's like its own language.
You have to learn a new language.
With this, you don't.
In fact, one of the cool things about some of these open AI APIs
is that you just tell it what you want it to do.
There's not even like a scripting language.

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A lot of it's in natural language.
And that makes it incredibly easy to use even for developers.
So I don't think this is a hard technology to use.
I agree with you.
There may be people who are resistant to it
because there's always people who are resistant to change
a new technology.
And you're right.
If they don't adapt, they're going to be dinosaurs.
But I don't think this is a hard technology to grok how to use
and get benefit from.
You might be right.
I mean, right now it's so new that the glue between systems
is just not there yet.
And maybe you'll be able to talk to chat GPT-4
and it'll connect your database on Notion.
And it will take a type form and a survey monkey
and put it all together and figure that all out for you
with natural language.
Oh yeah, that's the whole game right now
is feel connecting all these things.
And that's what I'm talking about.
And like that's kind of not there yet.
But in the auto GPT stuff, you need a developer right now.
But anyway, I'm deep in it.
And I am more excited right now.
This feels to me like 2005 to 2012 period
when you just saw Ajax and the web and speed
just all coming together so quickly
and the rapid iteration is just unbelievable.
Every day I find a new use for it.
I have made my default webpage opening
like when I open a new page on my PC
it just opens chat GPT-4 now
just so I am forcing myself to use it for every possible task.
And the people who work for me some of them are doing
it's most of them are not
and I'm just trying to drag everybody along.
And then you have at the same time
this remote work thing happening
where salaries I'm finding are starting to normalize
not across cities but across countries.
So, you know, hiring somebody in Canada, Estonia,

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San Paulo and then you add this AI to it.

The cost to do things is this is like, I don't know.

I think everything's going to cost about 10.

All this knowledge work is going to be 10% as expensive to do.

I don't think it's 10% less Chamath

or the, you know, I think it's like 90%

10 cents on the dollar to do knowledge work.

I agree.

I agree.

And it's not, this is not a five year 10 year prediction.

This is like five quarter 10.

By the way, we said that the first organizations to use this like the Canary in the coal mine would be the consulting organizations.

And today when Harvey got announced, one of the things that right on the heels of that PricewaterhouseCoopers announced like a billion dollar investment into AI which makes sense because as a consulting organization full of lawyers and accountants and IT folks, those are the services jobs that you get tremendous leverage if you were to use these tools.

Freeberg, any thoughts?

I don't know.

I mean, I think we kind of beat this horse to death.

We've talked about it for a couple of months

and I think we just keep repeating ourselves.

Are you doing anything when you're firsthand?

Are you playing with it yourself?

Yeah.

Look, tell us about that.

By the way, one thing I will say, we all talk about cost reduction and then, oh, you know, knowledge work is dead and we're going to save money and all this stuff.

What that is always the first reaction to any new point of leverage realized from some novel technology.

The second is suddenly people start doing things that use that leverage to do things that they couldn't have done before.

So it's not just about dropping costs.

It's about enabling new things that does 100 times more or unimaginable things prior.

And I think the next phase of this AI shock wave that kind of hit us and hit the world and, you know,

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kind of hit enterprises is going to be the evolution of integrating those tools in a very unique way with other tools to drive very novel things forward to create new things, new projects, new progress that was unfathomable before.

So it's not just about cost savings.

It's going to be about new stuff.

I shared a link on Twitter yesterday.

There was some guy, I want to quote him correctly.

His name is McKay Wrigley.

So shout out to McKay.

On his Twitter page, it says that he didn't know how to code in 2019.

He learned how to code for the first time he taught himself and he put together an object recognition tool with chat GPT.

I saw this video, it's crazy.

With his webcam and basically he holds up like a Diet Coke and he's like, you know, tell me how many calories, what is this and how many calories are in it?

And it's like, oh, there's no calories in it.

It's a Diet Coke.

And he does this three different times with three different objects

and he hacked this thing together in a couple of hours.

That is a product that was like theoretically unfeasible or kind of very difficult to kind of see

how you would put that piece together quickly and easily with one person in a room in a few hours a year ago.

And here you see a demo of this person who didn't know how to code not too long ago putting it together and creating this product that would have been such a profound startup.

Imagine if you went to VCs 18 months ago

and are like, look, I've got this thing

and I hold stuff up in front of it

and it tells me all about it and it talks to me

and I literally use my voice to talk to it.

And he basically strung together a text-to-speech, chat GPT, an object recognition tool,

all of this stuff completely open source

and a plugin that does web browsing.

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And the whole thing is basically like your own interactive visual robot. It's an incredible product demo and I thought it was so amazing and profound. I sure it's a prototype and it's kind of janky, but it was done in a few hours on almost a no-code basis. It's incredible.

So what's going to come from that is a whole set of new products and ideas and things that we are certainly not thinking about today, but in six months is going to become almost mainstay. And many new categories of products, many new industries, many new businesses are going to emerge that we're not even thinking about. So the Luddite argument of, oh, this is going to destroy jobs and destroy the economy and drop costs by 90%, lawyers are going to get cheaper, et cetera, et cetera. I think that doesn't even matter.

It's the tip of the iceberg.

What's more exciting is all the new evolutionary stuff that's going to hit the market that's really going to transform the things that we can do and that we didn't realize we could do.

There's going to be a really cool analogy for this because what you're really talking about is more people being able to use tools and be creators.

And what happened in the 80s and 90s when the NBA started playing exhibition games around the world was more people around the world started playing basketball and then you started seeing people like Luca or before him Yao Ming, Mutombo.

You started to have people from around the world who had never been exposed to basketball, just incredible talents emerged because you just had more people playing with the basketball. I think you were going to have more people playing with code and building products.

So you're going to have incredible amounts of creativity from people who maybe you didn't expect because they didn't go to school for coding.

I don't have that opportunity.

Hey, I mentioned I was in Fidai and I was at Fenwick's office

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and then Wilson Sincini's offices,
two law firms being the law firms
in the financial district in the Embarcadero.
It was an absolute ghost town.
And when I say ghost town, I mean like serious ghost town,
like weird, like this is still like being
in some dystopian science fiction thing
where you're the last man on earth.
And then we saw in the group chat today, 350 California Street
was worth \$300 million four years old.
It's a 22-story glass and stone tower.
It's a picture of it.
It's going up for sale.
And they believe, according to the Wall Street Journal,
that bids will come in at \$60 million, an 80% decline.
And we talked about this commercial real estate
would have this moment, a lot of the banks,
the smaller regional banks own this debt.
Saks, what do you think is going to happen here?
Who is the person who would buy an office tower in downtown
even at an 80% discount,
knowing that you have to pay all those carrying costs
and there's so much vacant office space
and it's only increasing?
Right.
Who buys this?
It's called land banking.
Okay, explain.
So in other words, okay, what I mean is, you're right,
there's 30% vacancy in San Francisco right now,
maybe going up even more in the next few years
as Lisa's role and people take less space.
You may have a countervailing effect
in terms of new companies moving back
because of AI or expanding.
So it's possible you start to see some growth
in the office market in San Francisco,
but the bottom line is 30% plus vacancy
is going to take years and years of growth
in order to absorb.
So you're right, this building, they can slash its rent,
but they still probably can't fill it.
I mean, there's just no demand.

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So you're going to be sitting on that property for five years, 10 years before the market comes back, the way that you need it to. But there's some value, right? Oh, it's going to trade way below its replacement cost. If you were to build that building today, it would cost you many times what they're going to pay for it. The problem is you can't finance that purchase with debt because the building's not going to generate enough revenue. So that's what I mean by land banking. It's going to have to be an equity investor who's willing to think long-term and say, I'm going to buy this at a super distressed price and I'm just going to sit there and hold it and wait, carry it. Like you said, bear the carrying costs until the market comes back. But Jake, I want to say something. I think it's a great analogy because public growth stocks have declined 70 plus percent, right, since the market started to decline. And we've talked a lot about the statistic that I've shared a bunch publicly on how 70% of publicly traded companies that have gone public since 2020 are trading below their total cash invested since founding, which should translate to an estimate that call it somewhere in the order of 70% of private companies are probably worth less than their preference stack. And so they're not worthless companies. They just have a capital structure that is upside down. Those companies are making products for customers. Those customers are paying money for those products. There's value there. There's real value there. The value has just been reset. And so it's interesting. It's not just the asset class of growth stocks and the asset class of private companies or private tech. It's also, you know, in commercial real estate. We try and treat each of these as if they were in isolation. But the problem is many of these assets were funded with some degree of leverage, preferred stock is leverage. And, you know, it is a form of debt because it has a preference over the shareholders there,

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the common shareholders, the equity holders.
And the same is true with this commercial real estate market that there was a certain amount of debt.
So the availability of low-cost capital securitized against some asset in the form of debt or in the form of preferred stock in a private company has the same effect, which it allowed the valuations to balloon on the equity.
And now that the market has re-rationalized the prices down 70 plus percent across all three of these connected but, you know, somewhat disparate asset classes, you're kind of having this big reset moment.
And funny enough, the other statistic is the cell phone traffic down 70% in downtown SF, right? So it's funny, all four of these numbers are pretty much on track.
Yeah, this chart is crazy.
It's literally like you have some cities that have more cell phone traffic than they did last year or a couple of years ago and...
This is downtown, by the way, not the whole city, but yeah.
Yeah, and Sam, I mean, the wider Bay Area is, is I don't want to say booming, but it's vibrant.
I said on last week's show,
I was looking for a place to host the accelerator in San Mateo area.
I got dozens of people contacting me hundreds of locations and offers at 25% of what their carrying cost is or like the, not the carrying cost, the rent was and people offering the major companies offering me free space just because they would like to have founders hanging around.
And there was one project that I was like,
I'll give it to you for whatever just because I want to get more people to downtown San Mateo.
That does sort of prove the point that there is a...
And I saw this in New York City during the 90s.
When things were so cheap, people just got creative with space.
It inspired people to say,
I'm going to create an art gallery.
I'm going to create a performance space.
And I don't know when that happens in San Francisco with these spaces, but feels like it's going to be a while.
I don't know what you...

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When do you think there would be demand for this space, Saks?

Have you had to pick a year over and give us an over under?

I mean, five years plus.

I mean, just to give you some numbers,

I think a healthy vacancy rate in an office market is 5% to 10%.

A high vacancy rate in a city was considered like 15%.

Like you wouldn't want to be an office investor in a market that had 15% vacancy.

5% to 10% was sort of the normal range.

If you were under 5%, it was a super hot market.

And then 10 to 15 was sort of a not great market from an investor standpoint.

So they're at 30% plus.

And like I said, it could get worse before it gets better because as leases roll, people are going to shed more space.

That they might not already be subleasing.

So the real number might be like 40%.

Psh.

So I don't...

I think it's like, yeah, it doesn't seem like a decade.

It's a decade assuming that San Francisco gets its house in order and companies come back.

And new companies are created and they don't completely wreck it.

It's not clear to me that like things will go in the right direction.

I mean, speaking of that, do we want to bring up this horrific bear spray attack now?

You want to cue that up, socks?

I mean, we're like in full-on Gotham City now.

Now we have vigilantes.

There was a story of a fire commissioner named Don Carboniani who was beaten with a metal pipe by a gang of homeless addicts who were encamped in front of his mother's house and apparently they were harassing her and they were doing drugs, smoking drugs or whatever right in front of...

Not pot.

It was like fentanyl or meth or crack, something like a hard drug.

And so what we know is he went down their head wards with them, but a beep, but a boop, you know, and they bashed him upside the head with a pipe.

And now it turns out that he was accused by the defendant's lawyer, the one who assaulted him.

So we don't really know what's true here of using bear spray on them first.

So the DA dropped charges.

The lawyer for the defendant in that case is saying that he apparently was the perpetrator of these bear spray attacks on homeless people

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going back a number of years.

I guess there's a, like you said, pretty gnarly video of that.

We don't know that it's him.

We don't know that it's him.

But obviously the DA thought something was kind of hinky because they dropped charges against the guy who assaulted him.

Shouldn't the person who sprays the bear spray and the person who beat somebody with a pipe shouldn't both people?

Yeah.

Yeah, of course.

Listen, there's video of somebody bear spraying homeless people and that's clearly wrong.

However, that was from a couple of years ago.

The one that was released is from 2021.

We have video from the night that Carboniani was assaulted that they were chasing him down the street with the metal pipe.

And even if they were acting in self-defense, you can't go chasing the guy to more damage on him.

Exactly.

That's vengeance.

That's not self-defense.

So they took it out of that zone of self-defense and they were chasing after him.

And if you saw what he looked like after the attack, they were using deadly force.

He could have been killed.

And, you know, if Donna had gotten killed by the metal pipe, I don't think it'd be a defense that he bear sprayed them first.

No, it would have been an excessive use of force.

So, but in any event, I mean, where the DA ended up on this, it was just to drop charges from that night.

I don't know that they're going to drop those charges.

I think that that's going to be untenable.

No, they already dropped the charges.

They have to, I mean, justice has to be blind, correct?

I mean, you're a trained lawyer here.

We have to apply the law equally to the sadistic and sane person who, and wait a second, they arrested the guy who hosed the person down.

Didn't they arrest them as well?

I remember seeing a perp walk.

We talked about that on a previous show.

Anyway, it's Gotham City, folks.

This has gone to pure and sane levels.

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Yeah, I don't think this just proves anything.
I mean, again, what they're trying to say now is that
because of the actions that Don took,
that San Francisco is safe and there's nothing to worry about.
And these addicts,
people who are encamped on the sidewalks doing drugs,
doing hard drugs, there's nothing to worry about because somehow
they were provoked by Carmen Yanni.
And I just think I agree with you that this is part of an overall
pattern of chaos and lawlessness in the city.
It is like Gotham City.
So, you know, it doesn't make me feel a lot better about what's
happening on the streets.
It's nuts.
Chamath, do you want to add something?
A lot of free bird toe.
Oh, riff on lab meat.
Yes. Well, there was actually a story about this.
I guess there's two types of lab.
There's two types of mock meats.
I've had the impossible burger.
I've never craved an impossible burger.
There's so many great burgers.
You can get out there, Shake Shack Five Guys in and out.
Why would I go to get this impossible burger unless I was
doing it like vegan stuff?
But then there was also supposed to be 3D printed meats.
And this stuff seems to be taking forever.
Where is this at?
Because there was a story in the Wall Street Journal about
how poorly this is apparently going.
So, there's three categories of these alternative proteins to
traditional animal protein.
The first is these, call it alternative proteins where you
use things like soy protein or pea protein.
Beyond burger is a good example.
They have a pea protein based burger.
And so, that category was kind of hot for a minute where
everyone was like, oh, it's an eco-conscious decision.
People will make the shift.
And, you know, Beyond Meat had this massive IPO and the stock
went crazy.
And someone said it was the biggest return ever for

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Kleiner Perkins.

But it really was just taking plant protein, processing it and trying to make it sort of mimic the texture and flavor and taste of animal protein.

And it's more expensive.

So, I've generally been fairly negative on whether that really moves the needle, right?

The needle for me is can you replace animal proteins traditionally and stop using all this land and putting all this carbon into the atmosphere and all this water and all these resources that we use to make all these animal proteins, which I think is both kind of ethically incorrect but also extraordinarily environmentally costly.

Sorry, can I ask a question?

Qualifying question.

Do you think it's also important for it to not just replace natural products despite all of those externalities you talked about with artificial products with chemicals and sugar?

So, first of all, everything is a chemical.

So, I think the categorization of all chemicals are bad and silly because everything is made of chemicals.

I think it's a question of are there bad things that are being put in there that's not good for your health to make it flavorful or whatever.

And that may or may not be the case.

It's really product dependent.

I don't think it's a good generalization.

But do you, so you think when I eat a salad,

I'm just eating chemicals?

It is chemicals.

Yeah.

Got it.

But healthy ones.

Right.

Healthy chemicals are in a salad.

There's good and there are bad.

Yeah, for sure.

And then bad chemicals are in like sugary cereal.

Yeah, like refined sugar is bad for sure.

Right.

That's a bad chemical.

And no, I'm just, I just want to understand.

I, you just viewed as a spectrum of chemicals.

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Some good, some bad.

Yeah.

There's things that are good for you.

There's good fats.

There's bad fats.

There's, there's, you know, and even in the category of sugar, some people say all sugars are bad.

Some people say some sugars are better than others as measured by the glycemic index.

All, you know, there's a lot of ways to kind of look at this stuff.

It's beyond meat and these P ones, they're all processed, highly processed.

They got a lot of salt.

They got a lot of fat, right?

They're, they're not good for you.

So the way that beyond and impossible and others have tried to make it taste good for people is they've added a lot of, you know, saturated fats, which is a way to drive them out feel and make it taste good.

But then a lot of doctors, the American Heart Association came out and said that those fats are really bad for your heart and you shouldn't eat them.

And also there's been a general kind of consumer sentiment shift.

So a couple of years ago, these were the hottest products.

It was like all the food ingredient companies were shifting to plant-based proteins and they were building plant-based protein business categories and it was this big hot thing.

And then they came out and they're like, wait a second, this isn't going as we thought.

What happens is people try them out and they're like, yeah, that's a cool thing.

I want to do good for the planet.

But would I rather pay five bucks for a do good for the planet burger that kind of doesn't taste that good?

Or would I rather pay three bucks for a burger that tastes really good?

And what happens is B, I choose option B.

Yeah, and so do most people, right?

And so almost all people.

And that's the point I view.

I've always shared.

I said it's just, it's not going to win the hearts and minds of the world unless it's cheaper and it's taste better.

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And healthier.

And healthier.

Yeah, and doesn't damage your health.

Doesn't make you worse.

Exactly.

So the more challenging technical solution is the other two categories.

The second category is can you synthesize animal proteins using recombinant DNA?

So this is where you take the DNA that codes for the protein, whether it's the milk protein or the egg protein or the cheese protein, and you put it in a bacterial cell or a yeast cell that are used to ferment, that we used to make wine, that we used to make beer and they eat sugar and then they spit out a product.

And in the case of wine and beer, they eat sugar from grapes or from malt or whatever and they spit out alcohol, ethanol and Genentech was the first company to really pioneer recombinant DNA at a mass scale.

They basically use recombinant DNA to make insulin.

So they took the DNA from humans that codes for insulin, the gene for insulin.

They put it in E. coli bacteria and then they put the E. coli bacteria in a big tank and the E. coli start to duplicate and they make all this insulin.

And that's how we make all the world's insulin today.

It's using that biomanufacturing process and it's how we make all of biologic drugs, all antibody drugs are made this way.

It's a \$300 billion dollar a year market just in biologic drugs.

So when CRISPR kind of came about in 2012, suddenly the toolkit to go in and do a much better job and a much cheaper job of editing the genomes of the little microbes to make them more efficient at making these proteins became standard and everyone said, let's go use this new category of what's being called synthetic biology or symbiote to make all these animal proteins that we use animals to get today.

So can I just ask a question is the idea that if you use recombinant DNA in this process, it would taste better and be healthier and all this chemically identical.

So it's the exact same protein as you get.

I understand I understand the exact same under a microscope or whatever, but would it taste the same taste?

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Exact same totally exact same.

So that's the whole doing.

Do we know that or was that that was the guess?

No, we know that it's the same protein.

So whether you get the protein from the cow or you get the protein from the yeast cell, the issue is too expensive to do this process because so the key metric in that second category is productivity grams per liter per day.

How well can you get that little microorganism to make that protein?

The more protein it makes per day, the cheaper the price per protein and we're still a far ways off from getting this to be price competitive.

So that's a challenged category right now.

There's a lot of I'm invested in a couple of companies in the space where we're trying to make it faster and cheaper to do that strain engineering to edit the genome up front and make them make those little cells more productive to bring the price per gram down and hopefully make it compete ultimately with the traditional market for eggs, cheese, milk, etc.

But what is the constraint?

Is it an energy constraint or is it an actual biological incapability?

No, so the great thing is on a first principles basis, the biophysics indicates that this should make proteins cheaper and that is good for the planet.

It's good for human health.

It's good for everything.

We should be able to make eggs, cheese, milk, all this stuff exactly the same as what you get from an animal without the animal because the biophysics of a single cell making it is better than the biophysics of a whole animal.

Think about a chicken.

It grows feathers.

It clucks.

It walks around.

It has energy and makes heat.

So the chicken as a system is not that energy efficient, but a little cell that just eat sugar and it's programmed to do one thing and one thing only.

Eat sugar, make protein.

Eat sugar, make protein and spit as much of it out.

You theoretically can make it way more efficient.

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Exactly.

Now we're making great progress, but we're not there yet.

We're not a commodity price point.

Why?

I'm trying to ask why.

Where's the failure point?

There's two failure points.

Sorry.

I should say there's three.

The first is strain engineering, which is you want to shuffle all the other genes in the organism to stop doing things like growing a bigger cell wall or, you know, taking your time to duplicate.

You want to change the genome of the cell to get it to do stuff faster.

The second stage is process engineering.

When you put that cell in a tank, you're changing the sugar, the methanol, the CO₂, the oxygen, the pH, everything about that tank and the condition of the tank has to be adjusted.

So there's about 60 variables and those 60 variables all need to be tuned and tweaked before you optimize the performance of production.

The third category is the hardest, which is scale manufacturing.

There's about a hundred million liters of biomanufacturing capacity on earth today.

95 million liters is owned and operated by companies that use and when I say biomanufacturing capacity, I'm talking about big stainless steel tanks.

You pour water, you pour sugar, you pour your cells in, they make copies and they make your stuff.

Of that hundred million liters, 95 million is owned and operated by companies.

Five million is available for rent.

Of that five million liters, four million is rented for its entire lifespan by some company, usually a biologic drug company because very little of this is being done in food today.

So there's only a million liters left to rent.

And there's 200 syn bio startups trying to make animal proteins and they've all competed for this, this capacity.

So the capacity cost has gone up by about four fold.

But it sounds like the, the latter two, you can overcome with capital, but the first one is really bounded by science.

It's more engineering because what you track is kind of what's

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called the tighter curve, which is grams per liter.

And the more experiments you do, the higher that number goes.

And so if you can increase your experimental rate and the few, the few grams that it does produce today when, when a normal person tastes it, they're like, yep, this tastes the same as a, a Wagyu ribeye.

No.

So remember, I'm talking about proteins right now.

I'm not talking about cellular meat.

I want to talk about cellular meat last, which is the hardest category, which is what you're talking about.

I'm talking about taking that protein and then using it to make a product like a, like a cheese or, you know, using it as an egg replace or that kind of stuff.

It's the same protein as what you would get from eggs or milk or what have you.

This all just sounds so hard.

Well, it's a big problem and it's a lot of money.

So is it a problem?

Eggs alone are \$200 billion a year.

I mean, the methane released from cows is one of the largest contributors to global warming.

It's a, it's a real problem.

Also, we're going to need to solve this to math.

If we're going to colonize Uranus, we're going to need to get food there.

I just asked question, like if you, if you go after the high emission categories first, do you give yourself room to leave these things because you're doing so much already?

Just a question.

Animal agriculture emissions are one of the largest and unfortunately one of the biggest drivers because as people's GDP per capita increments, the first thing they spend money on is protein.

No, no, I get it.

I'm saying something different, which is if we just invented better heat pumps, you'd have industrial heating and cooling, which represents like almost a third of all greenhouse gas emissions.

You get that off and you give yourself a lot of time and space and room.

And maybe you let the cows roam and belch and burp because the meat just tastes better and you don't have to spend a bunch of time and effort.

I don't think it's an ore.

I think it's an antimouth.

I think we should be doing all these things.

And I think that I, I'm a big believer as you guys know in markets.

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So I'm not a believer in transition for the sake of, you know, carbon saving because people aren't going to pay a premium as we've seen with the kind of alternative meat market.

\$15.

People want hamburgers or not.

Markets want cheaper, cheaper, cheaper.

So if you can make protein cheaper, it's also a great ROI.

You can make money doing this.

And the market will buy it because it's cheaper protein.

Have you penciled?

Sorry, I just want to, I just want to hit on this because we keep the side dragon low, but the third category is the one that the article was about, which is cellular meat.

So cellular meat is where you're trying to make your wagyu or your shrimp or your fish.

You're trying to make cells, not just proteins, but entire cells.

And those cells stick together and they look and cook and feel and taste like cellular meat, like, like muscle, like what you eat when you eat fish or beef or whatever.

And the problem there is you're trying to take a cell and cells normally grow on, you know, bones and on tissue.

And so there's scaffolding and all these systems that hold all the cells together.

And so to get cells to grow in a tank and stick together and replicate without other cells signaling them, turns out to be really expensive.

There was an executive at Merck I spoke to a few months ago and he said, we're going to sell fetal bovine serum, which is basically like this liquid that they get from the fetuses of cows.

And this is how cellular meat started.

They took a cell from a cow and they put in a tank with fetal bovine serum and the cell started to replicate and duplicate.

And then they could take those cells and try and turn them into a beef into a burger and sell it or try it.

That was the million dollar burger.

If you remember that a couple of years ago and fetal bovine serum market has gone through the roof because so many companies are trying to make cellular meat and the Merck exact was like, we're going to sell a billion dollars of fetal bovine serum and then we're going to sell zero because no one's going to be able to make money doing this.

It's just impossible.

You're not going to sell \$500 burgers.

So the technical challenge there is you have to edit the cells to get them to duplicate.

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You have to get them to grow in suspension, meaning in a tank instead of growing on bones and growing next to each other and scaffolding.

And then you have to change the feedstock so that you're creating all these other proteins and signaling factors and hormones that you pour into the tank that trigger those cells to grow.

Is there any chance that after all this, it's it actually just tastes slightly different or better?

It may.

Yeah, it may, but likely not.

I mean, let's be honest.

These are you're taking a cow cell or a salmon cell.

No, the reason I say this is that I don't know if you, I mean, you don't eat meat.

So maybe you don't know this, but depending on where the water that they drink, the actual grass that they eat, the meat does taste different.

And that's part of the, whether the cow is massage.

I mean, look at the acorn fed cows that we used to have at poker before austerity measures life was so good in 2021.

Well, that's that.

No, we can't get it anymore.

Yeah, I know we're on a budget.

I get it.

No, not us.

We can't get it anymore because they sell it through one channel.

But yeah, like that tastes so good.

Yeah.

The variation you're talking about is, is obviously at an echelon in a class of eating chamath, it's probably not mainstay.

Like, you know, the \$30,000 a year McDonald's burger and chicken nugget eater is probably happy to take.

No, I disagree with you.

Chicken nugget that tastes.

I disagree with you because if you go into Whole Foods and you actually buy like a USDA top sirloin, there's a certain taste that it has that things that are not USDA don't have.

So even, even at like the most basic layer of the food pyramid, you can differentiate on taste based on the same.

This is why I'm saying, I think it's just a very complicated, long drawn out process.

And I just wonder if the people that are in these businesses, if they actually love food or not.

I understand why they love the science.

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I get it.

And why they would love to save the planet.

I get that too.

But unless some of these people are, are, are also food lovers, they're going to miss, I think the thing where it all dies anyways.

I just want to restate again for the final time, these are, these are identical cells and identical proteins to what you're getting from the animal.

So they are not like what we talked about in that first category, where you're trying to get other stuff to sort of taste like meat.

You're literally trying to create the meat and create the protein using these systems.

And we're, I'm just trying to tell you that salmon, two pieces of salmon can taste totally different depending on where it's swam.

Right.

And I guess what I could say is the same protein.

Yeah.

You could probably adjust the conditions in the tank if needed to change the, the characteristic.

This is my point.

Like you don't even know where to start.

How is it the fucking kelp in the Atlantic Ocean?

Like what do you change it?

Look, I don't know what kelp effects on the salmon.

I don't know if salmon, but this is my point.

Nobody does Atlantic Ocean.

This is why we pay so much for the acorn fed beef.

I get it.

But most beef is not kelp from the Atlantic Ocean fed salmon.

It's animals grown in very large feed lots, fed corn and water.

That's it.

Let me just say that again.

90%, 95% of animal protein consumed is cows, pigs and chickens grown in feed lots, fed corn and soybeans and water.

And that's it.

Right.

But if you, if you go to different countries and taste the meat that's fed in that exact same way, it tastes different.

So for example, if you go to Argentina, look, I appreciate what you're saying, but the point I'm trying to make is you can recreate whatever the system is that you're talking about.

So I want to just get back to the unit economics, the cost per kilogram or the cost per gram of the protein, we are still many orders of magnitude away on cellular meat.

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So the problems you're laying out are really down the road problems of optimization.

Right now we've got more fundamental problems on how do you actually get this stuff to be cost competitive.

Now, fortunately, the tools of CRISPR and since CRISPR came out 10 years ago, there are now hundreds of variants that are open source, IP free royalty free and use very broadly and generally and DNA sequencing costs continue to decline.

Those are the two basic tools that are being used by biochemists and engineers to do rapid evolutionary iteration needed to produce the recombinant production of proteins to produce the new cells to produce the feedstock for those tanks.

And there's a cost curve that we're trying to get over.

It's not happening overnight.

Hundreds of millions of dollars and in several cases, billions of dollars have gone into these systems and it's very likely that these companies may need several more years and several billion dollars.

We are going to get there.

The technology is progressing.

The rate of progress is a little slower and it's a little more challenged.

I think then the first round of investors had hoped.

But I do think that scientifically and first principles, it is absolutely feasible.

It's a function of engineering our way there to giving Chamath and everyone else that eats burgers and chicken nuggets, everything that they want.

Hopefully at a lower price.

If you put it on the curve of self-driving cars, you know, we have crews doing some automated taxis in like a very constrained area in San Francisco, but we don't have it everywhere.

Where do you put this on the curve?

It's a great question.

So what's happened, by the way, as we've gotten down the cost curve, we are unlocking new markets.

So new products are being produced, existing proteins that come from animals.

There's a good example, a product called pepsin.

It's extracted from pigs today.

It's very expensive, similar to how we used to make insulin.

And we're replacing the sourcing of that product.

We replaced insulin, which we used to get from pig splines.

We now make it recombinantly.

We're now replacing pepsin.

We're replacing the, um, the rennet that's used to make cheese.

Uh, so as we move down the cost curve, these high, what are called

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high value proteins are the first to fall.
Those markets collapse because we now make them recombinantly.
They were sorry, they collapse in price because they're now cheaper using recombinant systems instead of taking them from animals.
And eventually we'll get to that cost curve where they're ubiquitous for all proteins or for all types of cells.
In the meantime, they're pretty sizable markets to go after.
These are multi-billion dollar markets that are getting knocked down.
We don't talk about it every day.
It doesn't show up in the news, but it's really profound and interesting to see that this technology is working.
It's overturning multi-billion dollar markets.
It's making progress and, you know, hopefully it'll, it'll get to the point that, you know, everything from the chicken nugget to the kelp fed salmon can.
Have you guys tried a beyond burger or an impossible burger?
I've had it.
I've tried them a long time ago, but I've not tried them recently.
They're like, it's like eating something mushy.
That's 60% of an average hamburger.
It's not worth paying double for, certainly for somebody who's a hamburger eater.
So while we were talking, by the way, Amazon's results came out.
They crushed it earnings per share of 31 cents versus 11.
And stocks up 10% off hours and it was up 4% today.
Where are the insider traders?
How do you feel about your recession prediction?
I'm sticking by it.
I think we're still going over recession, but it is an interesting paradox here.
So I think there's only a couple of possibilities.
Either tech is sort of immune or they forecast down so much.
They were so conservative in their forecast thinking we're going to be in a recession that it was easy to beat or look, I could be wrong about the recession, but Powell is saying it and Powell is saying if it's not a recession, it's going to be less than 1% growth.
It's going to be around a year to recession.
So he's not credible.
So I'm not revising my forecast.
Well, I think Powell is credible when he's giving us bad news because their incentive is always to fluff it up and make it sound better than it is.
So when he's telling you things look bad, maybe they're looking really bad.
I don't know, man, but look, it's a tale of two cities right now.
I mean, the big tech companies seem to be doing really well.
So it's definitely a paradox.
Yeah.

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All right, everybody.

Well, the whole RFK thing.

Okay, that's a good topic.

Yeah, great topic.

Go ahead.

I think we should tell people like what he's about.

Where are all yours?

I think he gave a terrific announcement speech and just to give you some background for the younger viewers who may not know.

So Robert F. Kennedy, his father, ran for the Democratic nomination in 1968 after his brother, John F. Kennedy, had been president.

It was assassinated as we know in the early 1960s.

What happened is at this time before the 1968 election, Lyndon B.

Johnson was the incumbent Democratic president and everyone thought that he'd be the party's nominee and he was going to get reelected and he was brought down by an extremely unpopular war, the Vietnam War.

And it was RFK Jr.'s father who was a great critic of the Vietnam War and he ran for the Democratic nomination.

I think that he very likely would have gotten it on the night that he won the California primary.

He was assassinated.

By Sir Han Sir Han, right?

Yeah.

If you go back and look at the things that he was saying in that campaign, he really was saying a lot of beautiful things that are in his son's ad that I think would be worth playing here.

But I think you have maybe the setup for a similar situation here.

You've got an incumbent Democratic president who is sort of not that popular.

He's sort of old and out of it and incoherent.

He's presiding over a war that is rapidly becoming a debacle.

You don't hear so much about the Spring Counter Offensive anymore.

These new Pentagon papers that were leaked show that the Ukrainian casualties are at least five times greater than they've been publicly admitting.

It looks like Russia is certainly not losing the war the way they used to be.

They've captured 90% of Bakhmut, which has been the most violent bloody battle of the war and Biden at this point has no strategy to bring that to an end.

In fact, he's rejected multiple attempts at a peace deal.

And so now it looks like it's the Chinese who are in the driver's seat, potentially putting together some sort of diplomatic settlement.

So I think, listen, if the economy ends up going into a recession and this war ends up becoming the fiasco that it's increasingly looking like, you could have a setup like 1968 where people are wondering why the hell is this guy our nominee?

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And let me tell you RFK juniors are already pulling at 19%, which I think is pretty good considering he just came out of the gate and people don't even know the substance of his campaign yet.

Marianne Williamson said 9%.

So if she dropped out, you'd be at 28% for the alternative.

And I think he could go up from here.

And I think if you, if you watch the speech he gave, I thought there was a lot of really beautiful sentiments in there.

He said that Biden is main Ukraine, a pawn in a geopolitical battle that has put the flower of Ukraine's youth into an abattoir of death.

In order to exhaust Russia, he channeled America's anti-war traditions.

He quoted John Quincy Adams that America should not go abroad and search for monsters to destroy.

He quoted Martin Luther King Jr.

There was a direct link between poverty and violence and oppression at home and war abroad.

He talked about the role of the CIA during his uncle's administration where he said that John F Kennedy eventually realized that the purpose the CIA had become to create a steady pipeline of wars to feed the military industrial complex.

And he talks about how JFK came to distrust the CIA and realize that it was lying to him.

And the biggest applause line of his speech was when he quoted JFK approvingly saying that he wanted to take the CIA and shattered into a thousand pieces and scattered to the winds.

And this very same week that he gave the speech, we found out that five former CIA directors had participated in a giant hoax on the American people by claiming that this Hunter Biden story was Russian disinformation.

They knew it was not.

They knew it was not.

The information on the hard drive was real.

It showed that Hunter Biden received multi-million dollar payments from foreign governments, including China and Ukraine.

Okay.

And regardless of what you think of that story, it should not have been suppressed by social media and it certainly should not have been suppressed in a PSYOP by 51 former intelligence officials, including five former directors of the CIA.

And if that's the way they're going to behave, if they're going to meddle in American politics that way, I think we do need to start over.

We do need to ask what's going on with the security state.

They're not supposed to be meddling in American politics that way.

So I think if this is the way they're going to act, I say, shatter away.

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Scatter that thing into a thousand pieces.

Hey, it's Catholic.

I'll vote for him.

And he's called out the insanity of COVID lockdowns and mandates.

I mean, that's the thing that he's, I guess that's the big controversy is he's an anti-vaxxer.

I guess that's the one thing they're trying to position him as.

And he does a little bit of conspiracy theories stuff.

So listen, if you go back and look at his record, he was an environmental activist for most of his career.

He did the Washington Project in New York where they basically bought the land along the Hudson.

I remember I've had some events for it.

They wanted to clean the Hudson up and they just bought the land and then people donated the land and they bought it.

They raised money.

And the Hudson today has like, you know, it's flourishing amazingly.

And he's directly responsible for that.

He was a big critic of the way that corporate greed could lead certain big companies to engage in environmental pollution.

And at a certain point, he realized that big pharma had a similar incentive.

Now, I don't know if he was right about those vaccines, but I do know that he's right in the case of COVID.

They had an incentive to push this dubious or a shot on us so that we get boosted a zillion times and he's right about that.

He was right about the fact that this should never have been mandated.

We shouldn't have the lockdowns.

And you know what?

In his nomination speech or his declaration, the word vaccine was only mentioned once.

So this is not what his campaign is about.

I look forward to having them on.

Yeah.

And to be honest, I mean, look at all the other things that were deemed to be conspiracy theories that ended up being true.

Oh, yeah.

Listen, that's monster.

Not that.

Can go either way.

I could be or it could be embarrassing.

Let me ask you this, sacks.

If it was him versus Trump, who do you vote for?

Well, I'm going to reserve versus Trump sex.

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I'm not going to take position on the general yet, but in the Democratic primary, I'm definitely endorsing RFK Junior in the Democratic primary.

Okay.

I'm going to vote in the Democratic primary.

I would if I could.

I'll do an event for him.

All right, everybody.

I had to all the amazing people who got together for the episode 125.

Unbelievable.

Over 40 or 50 of them.

Ray, great job.

Shout out to Ray.

Shout out to Ray.

I dialed into a bunch of them and I think.

Oh, it's great.

You're up and I don't know all over the place.

No one got robbed or mugged or bear.

Hopefully.

I don't know if they did any in San Francisco.

There's no bear spraying since that's good.

They had a big turn up to the marina.

All right.

For the Sultan of Science, the dictator himself and.

The mouthfeel about the mouthfeel and rain man.

I am the world's greatest moderating.

We'll see you next time, everybody.

Love you boys.

Bye bye.

Love you.

I'm the queen of kin.

Why?

I'm going all in.

I'm going to try.

What?

What?

You're going to try.

I'm going to try.

I'm going to try.

Besties are gone.

I'm going to go 30.

That is quite a dog taking a notice in your driveway.

Oh, man.

Oh, man.

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Oh, man.

Oh, man.

Oh, man.

Oh, man.

Oh, man.

Oh, man.

Oh, man.

Oh, man.

Oh, man.

Oh, man.

Oh, man.

Oh, man.

Oh, man.

What?

You're a bee.

A bee.

What?

We need to get merchies armed back.

I'm going all in.

I'm going all in.