

[Transcript] FYI - For Your Innovation / Coordinating Technology and Specialized Labor for Complex Needs with Francis Pedraza

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Hello, and welcome to FYI, the four-year innovation podcast. My name is Brett Winton. I'm the chief futurist at Arc Invest. With me today, I have a returning guest, Francis Petrazza of Invisible Technologies. Francis, hello.

Howdy.

How are you? I like your hat.

Thank you. I'm a Texan now. I love New York. I'm an inflation and tax refugee, and now I'm in Austin, Texas. I'm a resident.

It's not a bad place to be. I hear it's a growth place. Lots of people coming in.

One of the fastest and not the fastest growing area in the country.

All right. Why don't you remind us for those that didn't listen to the original invisible episode? What is invisible? What do you all do? Why is it being used?

Invisible is a new way to run your business. It's operations as a service. We provide both AI training and AI enablement services to the fastest growing and most innovative companies in the world, including OpenAI, Amazon, Microsoft, and AI21, Coheir, and others, who demand extreme capabilities and efficiency from their digital operations.

Wait.

We're counterpositioning.

Pause, pause, pause. I think that answer has changed since we last spoke. I thought of invisible as, hey, this is like mechanical turk, but done well. You have outsourced agents doing things, but that did not naturally lead me to expect that you would be contributing to AI training, for example. Can you expand on that?

Yeah. Understanding what we do requires a bit of an imagination. Suppose there's a black box that could efficiently execute any complex process at any level of scale. What would be the limits of that black box? There are use cases in every industry and function. It just so happens that AI training turned out to be the biggest use case that we have right now within the last two years that exploded as a need.

In terms of AI enablement, we were always an automation company, but AI has become the primary driver of automation. We were previously selling automation to the enterprise. Now, we're just selling AI-driven automation to the enterprise. We're counterpositioned against 20th century services companies like Accenture. They're not technology companies like us, and they don't run all of their operations on their own proprietary technology platform.

We've built a digital assembly line that solves a complex coordination problem. How do you build, run, and scale end-to-end digital processes with the right mix of specialized knowledge work,

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automation, and AI? That's the problem. We could use some examples here like DoorDash asked us during the pandemic, hey, can you digitize every restaurant menu in the United States and help us onboard restaurants onto the platform? We were able to do that. We help insurance companies process claims. We help hedge funds automate trades. These are just examples. Every business has these complex end-to-end digital processes that they either have to do in-house or outsource to these 20th century non-tech services companies that bill by the hour and just have an incentive to be inefficient. Wait, all of these things that you've just mentioned, if I were a business and I were approaching that problem today, for instance, DoorDash, wouldn't I say, hey, this is an AI solvable problem? I don't need invisible anymore. I'm just going to dump it into GPT-4 and it'll solve my problem. I don't need energy in the loop. Isn't that the way to do it? So we like to joke. There's an app for everything, so why isn't everything perfect? That joke is the essence of our business and you just said it perfectly. Everyone who's actually dealt with complex operations or actually tried to use all of these amazing technologies knows that the soundbite that you hear on stage, the pitch, it's not a magic wand in practice. In practice, you have to stitch together. We integrate 300 different tools into our platform, so you have to break down your process into steps and each one of those steps needs to be approached as a different problem. So this step is best solved by this tool and this step is best solved by this AI and this step is best solved by this automation software. And this step needs to be done by a PhD and this step needs to be done by just any college grad. And so we coordinate 2,500 workers in over 90 countries around the world. Believe it or not, if you had told me this earlier on, I would have been surprised. The United States is 20% of our workforce and our biggest single country, but we have a large presence in countries like India with 9% of our workforce, Europe over 8%, Kenya around 8%, Philippines around 8%, Nepal, Ghana, Argentina with lower numbers. So we have people all around the world that have very specific skills and inevitably any complex process can't be fully automated. Otherwise, there'd just be no humans in the economy. So what the economy is actually doing is using technology to continually push the frontier forward of what technology can do, which sort of moves humans continually into what technology can't do. And that dialectic is sort of never-ending. So to actually deliver futuristic capabilities, you need to have a synthetic approach, not just an AI-only approach. We call it synthetic intelligence, something that combines humans and machines into one end-to-end solution. So okay, I guess my prior would have been, hey, AI gets more performant, that should actually hurt demand for invisible services or invisible technology. You're kind of counter positioning that. Do you have evidence? Is this true though? Is it true for your business? Correct. I think one way of putting it, Brett, do you believe we're going to live in a world with one technology or many technologies? That's sort of the step one on the thesis. So we're a bundler. As I said, we integrate 300 different technologies into our end-to-end solution and we integrate 2,500 people. So do you believe in a world where all of that is going to consolidate into just open AI or just barred? Or do you think we're living in a world of technology proliferation and technology specialization? If you believe we're living in an increasingly fragmented technology landscape where there's more and more startups, more and more venture funding, more and more companies that are building tools that are specialized AI, specialized automation tools that are solving very specific needs, then in that

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incredibly fragmented technology landscape, invisible comes in and stitches it all together into an end-to-end solution. And then also, same thing with human labor. Do you believe we're going to live in a future where humans are irrelevant or where human specialization becomes increasingly specialized and humans therefore needing complex coordination to actually deliver an end-to-end solution for complex needs? So that's the thesis. Yeah. I mean, I guess what's interesting, again, one, you're using PhDs to digitize door-dash menus. This seems inefficient. What are the PhDs being used for?

Correct. The economist who inspired our thinking, I believe I mentioned this in the first podcast, is Ronald Koze, who 100 years ago was asking questions like, why doesn't one company do everything? Why are there many companies? And his insight was that between supply and demand, there are frictions. You have to transact. You have to coordinate. You have to use things. For us, it's finding the right technology, the right person for any given step in a process. So we use PhDs for things like, when you ask GPT a question, tell me about the chemical properties of helium. And you just keep asking it complicated questions about the periodic table of elements. How do you know that it's not hallucinating? How do you know that it's giving you the right answer?

You've had a chemistry PhD or a physics PhD who's answered, trained the model to do something specific.

Or if you ask it a complicated question about World War II, about the battle of the bulge, how do you know that it's not making it up? How do you know that it has the right answer? So there are a number of processes, adversarial training is one of them, that we co-design and co-develop with researchers at AI companies. And depending on what their goals are for the model, we help train the model so that it's more and more performant. It hallucinates less and less and is capable of doing more and more things. So your ability to trust an AI's answer. I was recently using an AI to build a financial model. And I realized that it's very bad at calculating IRR. Compounding is very unintuitive, apparently, not just for humans, but even for computers. So any of your listeners who've actually used AI know that there's a feedback button where you could say, this is wrong. And so imagine that feedback button was a whole business. That's what AI training is. Okay, but then that brings up a question because clearly they insert that feedback button because they're trying to get that data without paying for it effectively. How do you think about like, this is a big growth area for your business. Clearly, it's like driving revenue for you. How do you think about that risk of either them using kind of like their user interface to basically supply the data that you're providing or them like asking the model to self vet in some way and kind of, why do we need humans anyway to provide training on these things? From a historical point of view, this question has been asked since the Industrial Revolution. Now that we've created the cotton gin, now that we've built an assembly line, why do we need humans? And so there's this continual fear that you're going to live in a world of mass unemployment. And this would be this version for invisible, that invisible is going to wake up someday and all of its clients no longer need complex coordination, no longer need an integrated solution. Our thesis is that we're going to live in a world not of 90% mass unemployment, but a world where the wizard and the wand are co-evolving.

So if humans are the wizard and the wand is technology, the wand makes the wizard more

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powerful. The wizard gives the wand more things to do. And actually, there's just an incredible essay by Martin Heidegger in the middle of the 20th century. We're almost in a prophetic way. He was thinking about these things. The essay is called The Question Concerning Technology. And his idea was that technology is always revealing human potential and human demand is always driving technological evolution. So that's the sort of our general philosophy. Now, how does that turn into business practice for us? We really value agility in our strategy. So if a company comes to us with any operations need, they're like, we have this really complex operations need or problem. We're almost like McKinsey. We're consulting with the client. We're helping them design the process. And then we'll invent the process and run the process and scale the process as quickly as they need us to. So almost like there have been weeks where we've hired over 100 people in a week. We have the ability to, in theory, just scale up and scale down really, really fluidly. So that means that as needs evolve across our client base or in the economy, we can just rapidly respond. And that's a key point of difference between the typical approach of a tech company. So a tech company usually builds software to do one specific thing. And if you think about a tech salesperson, they're selling their SaaS app over and over and over again. Here's what our app does. You're the thousandth company using it. And you're going to use it just like everyone else does. It's just a tool. But for Invisible, we've built something that can run any process. So the limits are sort of the limits of the imagination. That horizontal technology platform and that architecture that we've built means that we can spin up or spin down any process and apply labor in any direction as the economy changes. So you're seeing demand for AI training right now, and then your belief it. So you don't know if this demand is going to disappear at some point. You don't have a point of view. You must have a direction, though. Clearly. I have a point of view. So I have a point of view around AI training specifically. I'll frame it as a bull and a bear. The bull case is that AI training is going to go from maybe a billion or two of annual spend to 10, 20, some unknown number of many billions of dollars of annual spend. And it's going to be one of the biggest industries in the 21st century economy. It's not going away. Wait, let me clarify. You're talking about AI training generally or specifically the human feedback portion of the AI training? Oh, no. The human feedback portion. Okay. Yes. Okay. Yeah. The services portion. And that AI enablement, which is using AI and automation throughout the enterprise, is going to remain a complex coordination problem that's going to require many different technologies and many different types of specializations. I'm way more confident in the AI enablement future than I am in the AI training future. And that's because AI training, it feels a little bit like the internet in 1995, maybe 1998, where everyone knows the internet's going to be a big deal. And everyone's right. And everyone knows that they're right, which creates a speculative bubble, which is 1999. And so the key thing for us is we're a profitable company, and we've maintained financial discipline. So if there was a downturn, we would just maintain that financial discipline. We would come out the other end. And so Amazon was able to survive the dot-com crash. How many companies from the 90s are still around today? Very, very few. And so we want to be that company where it's like, if there is a speculative bubble and it eventually crashes, how do we build the company to survive that and capture the opportunity

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on the other end, which we believe in? So we believe that 10, 20 years from now, there's definitely an AI training market. There's definitely an AI enablement market. But the cyclicity is the hard part to predict. Yeah. I mean, I guess from our perspective, yes, there's a literally measured in the tens of trillion-dollar enterprise value opportunity in being the AI foundation model that everything else gets built on. And it's very clear that the way in which their performance differentiating is very much driven or at least catalyzed by reinforcement learning with human feedback. So using this human labor to augment the models is a way to differentiate. And there are, XAI is coming into the market. There's open AI. There's Anthropic. There's Cohere. There's like the open source guys, Meta and Falcon. Like there's a lot of people going after what is a very big opportunity. And they have some amount they're spending on compute and they know to deliver performance. They have some amount they need to spend on human feedback. And number two cost is training. Number one cost is compute. Number two cost is training. And you just mentioned a bunch of our clients and hopefully future clients, near future clients. And that training cost actually is what makes the product good. It's like a quality thing. Right. And if you look at what's interesting also, it's kind of like these systems are so complex, they're very hard to benchmark. It's like, how would I benchmark to know that, you know, how many specialized benchmarks do I have to have to know that it's good at the periodic table? Right. Like you don't know unless you're the person that's trying to use it for that thing. And you're like, oh, this is wrong or this is right. And so kind of like the degree to which they win is in some ways hard to even know until users are interfacing with it. So I'm going to turn the question on you and be the interviewer. Like how do you think that the needs here are going to evolve over the next few years? You know, as these, so I perceive that these companies are very R&D driven right now

at some point. And that's to my point around it being a speculative market right now.

At some point they become very commercially driven, where they're actually responding to real needs in the market, commercial needs, real clients, real users.

When do you think that shift will occur? And then what do you think is going to happen to the economic models that are the business models that are supporting this R&D?

Well, I think there's a few ways to approach this question. But one like very tangible way is if you look at what they're spending, forget training just on NVIDIA chips, NVIDIA, for NVIDIA to be like a successful investment, just to meet expectations, it has to sell \$110 billion into data centers over this year and next year, 110. And if you think about typical software economics, that has to be like a cost line into 80% gross margin business. So there needs to be something like you can do the math in different ways, but on the order of \$700 billion in AI software revenue that spills off the back end of those NVIDIA chip investments, or else there's a problem. And so in some ways, it's like they need to begin monetizing almost like in relatively short order, just to justify kind of like the capex that they're laying out. That's \$700 billion, depending on how you do the math. That could be like three to five trillion in AI software market cap. And that excludes Google, which is on its own chip stack. So there is conditional on like these being good investments for them, both spending on you and spending on these chips. There needs to be like the creation of multiple trillions of dollars in AI software market cap. And then here's the key question, because remember, I'm not asking Brett questions

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about my business. I'm asking him questions about something that he's an expert in. What makes the foundational models defensible? How does this not just get commoditized? Well, I mean, I think that's a subject of like active debate, because you know, meta is open sourcing them. Like how do you compete against free? And an argument could be you end up with like kind of a virtuous cycle of data where you're getting data off the user behavior that then allows them to cut you and invisible technologies out of the process. And they're kind of like they have enough user inputs to continue getting user feedback on their models and they perform. Or you get baked into so many processes on the bottom end that it's hard to extract you out. So you know, open AI is clearly getting commercial traction right now. You can argue they're under charging for the product. Like if you give a BCG consultant a GPT-4, they're 1.75x more productive than the average BCG consultant. Isn't that incredible? It's like for \$20 a month, that's way too cheap. Correct. It's incredible. If they wanted to turn on the monetization engine, they could, but they all see the competitive game of like we need largest possible strategic footprint. And see, I think that's the argument for continued demand on the training side, both human feedback and kind of dumping money into computers. Like the opportunity that's out there is so big that it justifies the kind of like push of chips onto the table. And capital markets will recognize it and continue to kind of, you know, I mean, ostensibly open AI's valuation is tripled and anthropics valuation is something like 5x. So you don't take that valuation and not spend some of those chips. You take that and say, hey, we spent \$100 million on GPT-4. What happens if we spend \$1 billion? How good is it? How big is our strategic footprint? So on your side, from what you're saying from clients and prospective clients, do you see any indication that they're like, oh, this is a lot of money? Or is it kind of like all gung-ho from here? Yeah, these are clients that are sensitive to the capabilities and the performance, not to the price. And that's because there's no other firm selling these capabilities. We're not doing low-level data training for these AI models or data labeling. We're doing very advanced, you know, training, working with their research teams, co-evolving processes, and training the model to do very specific things. And that's very different than like, you know, commoditized labor. It's very, very specialized work. If it's so specialized, why don't they just internalize the capability? Like, what is it? Why do they need you as opposed to being like, hey, we can do this ourselves? Yeah, so most of our clients realize they have like two alternatives to using Invisible. One is building an advanced operations team in their own company, which means operations management, and then actually having all the labor. And the labor would be worldwide. And so you have to coordinate the labor and build your own proprietary technology platform, build your own digital assembly line, build your own Invisible, which has taken us eight years to build, to pay those people, coordinate shifts, train them to do work, hire them efficiently, align their incentives, all of that. And then you would need to build your own process builder. And so that when you automate a step, you can use other tools instead of your own tools. And you need to build your own automation team and your own AI team to build automations or build software when there's no third-party tool available. So you would need three things. You would need your own workforce, your own technology platform to coordinate that workforce

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and structure the processes, and then your own automation and AI team to build automations where on the steps that third-party tools can't integrate. And so that's a huge distraction.

If you're an AI company, you just want to focus on building your proprietary models.

You want to focus your extremely expensive, I mean, actually your whole pitch to investors and the capital markets is that you're investing in a software company that pays expensive engineers to do miraculous R&D. You're not managing global labor and integrating many, many, many third-party technologies.

So if you think about an Apple iPhone, it's one of the most valuable products in the world, but none of the components in the iPhone are necessarily unique.

Samsung can create many of the same components. They've vertically integrated over time, but where the actual alpha is or the value was is actually creating the integration of those components and the creation of a user experience that was just so. It was exactly correct.

And Invisible's business model is very much the same. We're an integrator of so many components that exist in the world, but the technology platform is the thing that integrates them all, and you wouldn't want to build your own advanced AI and operations team in-house to do that or your own operations platform to do that. What was the in-house option?

The second option is to go to a 20th century services company like an Accenture, Deloitte, an Ernst & Young, a PWC, a KPMG, and these companies are huge, like \$50 billion a year of annual revenue, roughly scale, but they don't run their operations on a technology platform. There's no digital assembly line-powering Accenture, and so they're not necessarily at the cutting edge of integrating third-party automation tools, building their own automations, and as a result, they're just slower, and their incentives are more misaligned.

Their incentive is to bill as much as possible, not necessarily be as efficient as possible.

Okay, so imagine that I believe in the AI training store. Well, actually, I guess, so you differentiated between the kind of like, this is kind of bespoke, like solving a problem for these companies on the training side, but these companies also rely on a lot of like data labeling as well, I think. How are they choosing you versus just like kind of a more mass data labeling type company to do a particular job? Yeah, a good example of a mass data labeling company is Scale, Scale AI, and obviously, I'm not privy to insider information about that company, but they've raised and burnt something like \$600 million, you know, building this company, and they have, so they're, you know, historically anyways, have been a loss-making company, and they've built a lot of their technology or sort of very narrow and deep use cases around data labeling, and this means that when a client comes to them with some sort of a need that's outside of that very specific use case, they can't necessarily provide that need, and they don't vertically integrate their labor into the solution. They just sort of have a marketplace and a bunch of vendors and people who sign up, freelancers, who are then logging into a very constrained interface and doing work, whereas we actually have a managed service, coordinate our workforce, train our workforce, and are fully vertically integrated with our workforce, so our technology platform is horizontal. We can support any use case, any industry, any function, and it's not oriented just specifically at data labeling, although that's something we can do, and our workforce is integrated. Wait, actually, can you, Claire, Claire, how are you distinguishing between data labeling and other stuff that you do? What do you mean? So let's think about the use case for autonomous vehicles. If you're like

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tagging, this is a human, this is a pedestrian, this is a biker, these sort of basic tagging operations, if you think, I guess, about what you get questioned on when you're doing a CAPTCHA, when you're logging in to say your bank account, and it's asking you identify all the images here with street lights, that's very basic data labeling. When you have an advanced workflow with many, many steps, and those steps require very high-level skills, and you have workers that are in that workflow, and helping you upgrade the process, that's a much more advanced workflow than just labeling some piece of data as this or that, a cat, a cat, or a mouse. You just distinguish between data labeling and what you all do, whereas I would have thought,

well, don't you just do data labeling? How are you distinguishing between these categories, and how do you, is what you do different or broader than just data labeling?

Advanced AI training is what we do, and so data labeling, imagine you're logging into your bank account, and it gives you one of those CAPTCHAs, or one of those image recognition puzzles, where it's like, list all the bicycles that you see in this array. That's an example of very basic data labeling, and there's more advanced data labeling. A lot of scale AI's technology is around supporting specific data labeling use cases, for example, autonomous vehicles. How do you train all these autonomous vehicles to recognize if that's a human that they're about to hit? And so we do something quite different, which is that we'll build a full and complex workflow with a client that has some steps that can be automated, some that can only be done by like a PhD or a master's in a specific field. And we are training the model to do specific things, and then sometimes taking the model's responses, and then showing, no, this is the correct response. These workflows can be any number of steps. They can have any level of complexity,

and they have specific business goals in mind, and we are designing the processes and continually building new processes and upgrading the processes based on the performance. That is, not just basic data labeling, and it is human input into the model, for sure, but it's not just basic data labeling, and that's the distinction.

But it's kind of like, it's a more complex, it's almost like, imagine I'm trying to teach a kid how to do math, and is the human input I need for teaching a kid how to do math just like answering what three times 10 is, and three times 11, and three times 12, or just like a very like, hey, I'm just going to give lots of math problems, and I'm going to provide the human answer to all those things. Or is it kind of like walking the kid through like, hey, these are steps that are interesting in a complex problem. And so in some ways, like from the concept of what is this human feedback providing to the models, it's, as the models get better and more performative, maybe you need kind of actually a more complex like training operation in order to deliver performance advantage. Correct. That's right. That's right. That's on the AI training side of our business.

On the AI enablement side of our business, it's more of like normal companies and the rest of the economy, whatever industry they're in, financial services, healthcare, marketplaces, that have normal business operations, commercial business operations. And they're thinking about how do I make these operations more efficient? How do I streamline my business? And how do I use AI? I'm hearing about AI. I'm listening to the FYI podcast. I know that AI is going to change the world, but how do I actually use it in my business in this operation on this process?

And that's where we are going to plug in as many software tools as much automation and AI as

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possible

and whatever steps remain, we're going to run it with our humans in the loop at whatever level of complexity the human steps require. That's the AI enablement side of our business. And so like, why should that be you? As in, again, back to the, shouldn't I just be able to plug in the menu into GPT-4 and say, tell me what the items are? Like, why do I need kind of invisible for this when I can just sign up for open AI? It's the same dilemma. We know that no single piece of software is going to solve all the problems. We live in a world where there are many, many different technology companies offering many, many different solutions. And so you need invisible to use 300 different third-party tools and have our own in-house team to bridge whatever gaps exist. And then it's the same thing with on the labor side, which is, you know that there's not one single type of person who is necessary to complete all the steps in an advanced workflow. You mean you need different people at different levels of skill with different levels of training. So your alternatives to invisible, if you're a client, are alternative number one, build invisible in house. Good luck. It took us nine years. You're going to have to build your own technology platform, your own operations team, your own AI team, and integrate 300 different tools into your platform and basically become a competitor to us. Good luck. Or the other option is higher eccentric. Okay, fine. Yes, higher eccentric. No, but I'd offer like the alternative that people are probably unintentionally selecting for is actually just status quo ante. Like I have a person that's kind of doing this thing, you know, and they understand it's like not super productive, but I don't know if the person who's doing the thing really is incentivized to be like, hey, this thing's not productive because they're getting paid for doing the thing. Right. And so it's kind of like, it seems like the alternative number one or the thing that most people are biased into is not do any of that. They like say, hey, well, let's give this employee like a general AI tool, maybe they can figure out how to make it more efficient, but that person doesn't really know how to use it. And maybe they kind of managed to cobble together some things, but maybe it's just kind of like stick with how we were doing before, but now the person has a great chatbot they can ask for recipes with whatever's in their fridge. You effectively gave the person a pay raise. Yeah, they're able to get able to get more done in less time and get paid the same amount. You're not actually making your business better. Yeah. But that's, that's assuming that one general AI tool is going to, going to solve the majority of the use cases in your business. That's just not actually the world we live in today or the world we're necessarily going towards. We're probably going to a world of many different tools that need, need integration. Right. And then there's the last mile. We talk about last mile incentives. I mean, this is also a good, a good time to talk about that. You know, in our, in our business, we have this philosophy of alignment, alignment of incentives all the way through our business model. So we try to align our incentives with clients around unit prices instead of hourly rates. Because once a unit price is established, everyone's incentive on our side, our incentive is to, you know, do it better, faster, cheaper, because our margins will grow and the client gets, you know, clarity on how their unit prices drop over time as, as we scale the process. And then on within our business, you know, the incentives are, you know, for the equity shareholders to obviously grow the equity value, but even down to the agent doing work, we have results based agent pay. So the agents get paid more, the faster they get the work done, the higher the quality is and the more complex the work is. And we were continually trying to make sure that

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that last mile incentive does not break down. And I just got an email yesterday from an agent who is proudly sharing like, I've used this script to create the following 10 shortcuts. And he listed out the shortcuts and I immediately CC'd our automation team and was like, great, let's, let's use this throughout the, you know, the company. And we're trying to be in that continual upgrade mode where everyone's pushing for more and more efficiency. It's very difficult to create that in most businesses. Because most businesses are focused on, you know, delivering whatever their core good or services, they're not necessarily focused on upgrading their operation, their, their, the way that they operate. The classic test of this is like, are the operations in your business on a technology platform, and are all the incentives of all the, all the workers aligned with, with efficiency. And most businesses would fail that test. I think it's actually somewhat hard to measure operational efficiency within, particularly within like a knowledge work type business, where there's like a lot of, you know, it's kind of like, do you know deeply like how many emails had to go back and forth for this particular step to happen and, and what the right way to kind of actually do it is. And I think for a lot of businesses, they don't. And actually from an AI enablement perspective, or what I, one of the things I find interesting about kind of you all's approach to the problem is that by forcing the business to processize things more, they actually create more opportunity for automating the entire operations flow. As in right now, I think there's very little visibility into operations across a lot of businesses. And so kind of like getting, you know, you, it's not only just, it's like making the entire operations chain of the business like able to be measured and more efficient if they go on to your platform. Yeah, by moving on to the platform, you get all this visibility and reporting. And you can see you could sort of almost like a factory that is also a glass box, you can look inside the factory and see all the stuff moving around. And so you're, I think businesses are going to require, you know, small tightly coordinated teams of, you know, equitized people who are, you know, trying to innovate. But then once you create a process, and that process needs to be run a million times, you're going to, you're going to want to hand it off to invisible. I read a book when I was still in college that said, you don't want to work in your business, you want to work on your business. This is exactly what we want to empower our clients to do. You don't want to be turning the crank. Let invisible, invisible is a new way to run your business. Let invisible do all the crank turning. You want to be upgrading the crank, upgrading your business model. And, and so let us, let us upgrade the operations around the operations and you can just focus on innovating. So I understand how like the urge to do AI or the, or these new tools, like as kind of gives a tailwind to enablement for invisible is there, is there like being good at the training side? Does that enable you to be good at the enablement side? Or do you see those as separate capabilities? They're interrelated and I think synergistic. So when you are at the cutting, when you're literally building models and you're at the cutting edge of what the capabilities are, you also are going to be the best at figuring out how to apply them in the real, in the wild, in the real world, in the economy. And then, then the sort of the feedback loop goes back around when you see the limitations, you're better at training them. So, so it's sort of the yin and the yang of our business. AI training, how many, how many companies are there in the world that are spending millions of dollars a year on training their own proprietary AI models? Actually, I'm curious what your answer is.

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I don't know. I mean, I think that so Databricks and Mosaic definitely facilitate companies doing this. And I know companies are beginning to invest in it. And I don't know how many there are. I think

broadly the sense from the from call it the investor, you know, particularly public and private side is that the boards of directors have all turned around to their CEOs over the course of the last six months and then like, what is our AI strategy? And CEOs like, what's AI strategy?

But my sense is that that's AI enablement, not AI training. Like, I don't think those boards that are pressuring, like if you're, if you're any random Fortune 500 company, I don't know, if you're the CEO of Coca Cola, your board is telling you use AI, but they're not saying build an AI from scratch. And so, so I currently, let's call it, there's a couple dozen companies in the market for AI training. And we work with a lot of them. And then there's AI enablement, that's the whole rest of the economy that is going to be using all these AIs and trying to figure out what the gaps are, what they can do, what they can't do for my business here in, you know, oil and gas, or for my business here in solar panels and, you know, California or whatever it is. And so that's, that's the AI enablement opportunity, which is much broader.

And I think much, much more resilient to cyclical forces in the economy. If there's a recession, guess what? People still need efficiency. People still need productivity gains. They actually need it even more. And, and, and all that volatility means that processes are changing.

So AI enablement part of our business is, is, is the true future of our business almost no matter how big and no matter how attractive AI training is, because AI enablement will always be bigger unless you believe we're going to live in some future where literally every business is building its own proprietary model, but that just doesn't make sense to me. I think there will probably

be a lot of growth in AI training, but not, not universality. I mean, if you think about the, what reinforcement learning with human feedback provides to the foundation models, or people talk about it as alignment, like, can I make this model helpful and harmless?

As in, can it, does it successfully answer the questions I'm asking? And does it not lead me down a rabbit hole into like building my own nuclear bomb? Right? Those are like the two things. And, and, and, and they present that as this is an ethical thing that we need to do to release these things, but also practically helpful and harmless and being able to be helpful in a persuasive way is how like sales happens. As in, if I'm training, if I, if I'm not just a general purpose model, but say I'm the model specific to a software vendor that's supposed to be the sales model that's making a sales pitch to a client, you know, maybe they need kind of a training, basically human feedback to essentially train their AI model for sales persuasion specifically to their specific product set. So it could be like a gloss that they're putting on purpose models that's actually more human driven than you imagine. And, and that, and that kind of deploying it against in customers does require like, you don't train your sales force, you train your model once. And so because you're training it once, you don't like hire up a bunch of an ongoing operation, you outsource it to invisible to then come back and kind of like, hey, give it a new gloss. Let's see if we can increase sales efficiency here. Let's train it on the newest step. So it's possible that could be a continued growth area. Yeah, I bet, I bet that we don't, we don't have, we've not done any government sales yet. But I bet that the models that the CIA are building are very different than the models that Disney needs to build, right? So that's,

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that's, that's a way of visualizing it for me. It's like, yeah, you need these models to do different things. And I sort of, I sort of doubt the CIA's models are harmless.

Well, I guess from whose perspective. Okay, but you said something earlier that I'd like said, like you said, you're profitable, which seems like an insane and dumb thing to do. Capital markets will fund AI driven businesses to, you know, like scale raised \$500 million. And it's clear, like, from what I know of your revenue and growth rates, you probably should be like gearing up for an IPO. Why, why not? And how do you think about like, why be profitable when you could raise more money and scale more quickly? So we're approaching 100 mil run rate by the end

of this year. And we've, our growth rates are high. We exited last year at a 25 mil run rate. So we've nearly, nearly quadrupled this year, our top line revenue, but our profits are growing faster than our revenues. And that's because our overhead is not scaling at the same rate as our, are the rest of our business. You can think of it in terms of, again, let's take an iPhone as a metaphor. When Apple builds these phones, every single time they build the phone, there's the actual materials that make the phone. And that's the cost of goods sold. So they have to manufacture this thing and ship this thing. And that's the cogs. So you take revenue minus cogs. And for our business, you get 50% gross margins. So we're definitely trying to automate the and grow our gross margins, but that's, that's what it is. And then you subtract the cost of the Apple Store, which is the cost of your sales marketing support. So the cost of the billboard ads and the cost of the Apple Store, and then you get your contribution margins. So for us, that's 40%. And then there's GNA and R&D, which is like your CEO, your CFO, your CMO, and then, you know, all the engineers, the, all the designers, all the product managers. And then you get your EBITDA margins at the bottom.

So ours are, we're, we're increasing profitability faster than we're increasing revenue.

And that trend should continue for the next four or five years. And this is my favorite interview question, especially for finance candidates, which is, has revenue scales?

What do EBITDA margins approach asymptotically? And the correct answer is they approach contribution margins because you just don't need to hire more CEOs, more CFOs and more CTOs.

And there's not a one to one correlation between the number of engineers, Apple hires, and the number of iPhones that Apple sells. And it's the same, same thing with us. So we are able to meet all of our investment requirements in every department. I'll give you an example.

Next year, if we shrink the total percentage of revenue going to GNA and R&D from 26% to 20%, we will still be able to invest at least 7 million more, at least 7 million more in

GNA and R&D next year than this year, because the number of absolute dollars flowing through is increasing. And so, so then this leads to the question of what's sort of a company culture

and what's your, what sort of a company strategy do you want? And so in, in a, in a mindset, which is a grow at all costs mindset, you're just trying to jam dollars into the business

to eke out anything that sounds like a good idea we should do. And that actually has been traditionally the, the operating culture of most venture-backed startups. And the strategy of most, the strategy of most venture-backed startups, which I call the venture game, is you raise money, you spend it as, you know, quickly as possible to create as much growth as possible, you raise more money, you spend it, and you keep raising bigger round after bigger round, running bigger loss after bigger loss, and then you either IPO or you sell. And it's a five to seven year long game,

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that's the VC game, series A, B, C, D, E IPO or sell. This, this is an incredibly high-risk approach that tends to destroy most companies. Sometimes it works really well. And for certain companies, it's kind of the only, certain companies in certain market situations, the only way to go. We're playing a game we call the sovereignty game, which is we got to profitability, we're in our third profitable year now. And we actually have started buying back stock. We bought back 25% of the company from investors in 2021 and 2022. And so now 70% of the company is owned by the team.

So if you had to ask yourself, if you were a shareholder, which company would you feel, feel better about owning the company that is just focused on growing enterprise value, or the company that's focused on growing shareholder value? That's a trick question. What really is the difference between shareholder value and enterprise value? I'll pause there. Okay. Well, so let me present the counter argument, which is that imagine that there's a, there's a certain size you need to be in order to compete in the game. As in, like you need to establish a, like imagine from invisible's perspective, you know, there's, there are certain processes that are shared and common across different enterprises. And so if you can sell in the same process to multiple enterprises, then you don't have to invest in the kind of like, or decost of like spinning up the process, you basically get to sell in at the scale price to the next enterprise. So it looks that much more efficient to them. And so kind of having like a breadth of customers at a certain scale is important for the unit economics of the business. And it could be that, hey, actually to, to get a large enough strategic footprint requires you to essentially pay for early customers at net negative margin to like hit kind of like that strategic footprint that ultimately becomes like the money printing machine. Is that? Yeah. That's like a Uber, Uber versus Lyft deathmatch. And those Uber versus Lyft, Lyft deathmatches, they tend to destroy shareholder value. Everyone's competing each other in a race at the bottom. We are not in such a game. And part of the reason is that the services industry is so large. It's not a winner take all market. And if it becomes a winner take all market, it's probably through a platform strategy like ours. So just, you know, you know, these numbers, but just to, you know, to, to bring the listeners into the, into the game with us. The global economy is roughly 100 trillion dollar annual economy. About 30 trillion of that is knowledge work. And 10 trillion of that is knowledge work in China. So there's 20 trillion outside of China. And over the course of the decade, say by 2030, Brett predicts this is going to grow by at least 10 trillion. So by 2030, it'll be like 30 trillion of knowledge work outside of China. And then how big is Accenture say is one of the biggest services companies, they do about 63 billion of annual revenue. So I'm not good enough to do that percent in my head, but it's just a tiny, tiny percentage of knowledge work. So if you take all professional services, you know, what percentage of that knowledge work is done in house, what percentage of that knowledge work is outsourced, there may be, say, three or four trillion dollars of outsourced work and the rest is done in house. What do we think is going to happen by say 2050 or 2040 or 2030? I think the percentage of work done out of house is going to increase. And there's going to be tremendous consolidation in the services industry as the services industry becomes a technology industry. And a lot of the biases that we had in the early years as we were building the company was the belief in the technology industry, the belief

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amongst technology investors venture capitalists was that there's no such thing as a true technology company. That is a true services company. And we just flew in the face of that dogma. We said no, we were a true technology company and a true services company. We're, you know, trying to build the iconic 21st century services company. And we're trying to build the BPO, business process outsourcing company to, you know, the one BPO to rule them all. And that has been our approach. And we're not embarrassed about being a services company. We actually think that's what clients want. And that's where most of the value is, where Silicon Valley has just tried to invest in only product companies that are basically tools. So it sounds to me like, given the right value for your equity, say a venture believed in you as a technology company and so it's giving you a technology multiple, then would you accept kind of like equity and then try to see how fast you could press the accelerator? Or is the way in which the business is structured or the way in which you see the market, you couldn't really efficiently deploy capital to accelerate or try to like take larger strategic share? It's the latter. I don't think we can efficiently deploy capital to grow faster than we're growing, which is very fast to give you a sense of what this looks like on the ground. We've just grown beyond 100 partners on the core team. So those are the top team members with equity positions. And we have 2,500 people in the company. At last September, we just hit 1,000 people at the company. So we've more like 2.5x the size of the total team. And then we had something like about, I'd be surprised we had more than 50 partners. So we've more than doubled headcount in a year. Now, if you think about what that's like as a manager of a business, actually, probably a lot of our listeners can imagine what that's like at their own workplaces. If you add too many people to the team too quickly, there's a bunch of newbies and no veterans. And so you need, you actually can't grow the headcount of the organization responsibly beyond a certain rate. You have a bunch of people who don't know what the company is about. I've never, you know, trying to work with other people who don't know what the company is about. And so if you want to absorb people into the culture, there's sort of a maximum rate. And then there's this issue of scrappiness and resourcefulness, which is that the game should not be about trying to maximize the amount of R&D dollars we are spending. The game should be trying to, for every given R&D dollar, maximizing the leverage we're getting out of it, squeezing as much value out of it as possible. And that comes through innovation, creativity, resourcefulness. When are you most creative and resourceful? You have constraints. Scarcity actually creates productivity. Scarcity creates efficiency. So by creating a company culture where everyone's an equity shareholder and everyone's incentives are aligned with profitability, because they know the company's going to stay private and eventually become a dividend machine, they know that that is their path to decrease risk and increase their returns is all around getting more value out of every dollar. And so if you suddenly become this spending culture that is spend at all costs, grow at all costs, you just, you get really fat, really bloated really quickly. But what about, okay, so then you have partners in the organization that it's nice to wait for that healthy dividend when it comes, but they need to buy a house now. How do you think about kind of like the trapped equity value they call it they have in, you know, like a great company, but it's also kind of majority of net worth type stuff. How do you think about that? Correct, correct. So I'm in this position. We're going into our ninth year and we're just now at the end of this year for the first time, creating a market for people at the company to sell their

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own stock. In 2021 and 2022, we bought back a bunch of early investors. But now at the end of this year, we're doing a combination of buybacks and secondary. So the company is setting a floor and saying at this price, we're going to buy at least \$4 million off of balance sheet and we're willing to repurchase and retire those shares. That's the buyback. But then we're going out to the world and saying, Hey, is anyone interested in buying shares and invisible in a secondary transaction? And for those who are listening who aren't familiar with this terminology, a primary offering is when the company is issuing creating new shares out of thin air, creating new stock, and then selling it in order for the company to get money on its balance sheet. But a secondary transaction is a shareholder in the company selling to some new outside person who's interested in selling. And that's not the company is not the broker is not not in between that transaction. And so we think that we're going to get like we're currently raising 15 to 20 million of secondary to facilitate liquidity for the cap table. And we're probably going to do this every six months. And eventually, you know, we think the market will be so liquid kind of like SpaceX stock. So SpaceX is, you know, a company worth more than \$10 billion. It's not public. And shares are pretty liquid. So they basically have liquidity in their shares is enough demand for SpaceX shares worldwide that they have not needed to to go public to create that liquidity for shareholders. That's our path. And and right now it's an expensive ATM. But it's an ATM that works. And it's an ATM that you can pull money out twice a year. Eventually, you know, you'll be able to pull that money out of the ATM at any time. And the it's not going to be as expensive as an ATM. There will be less of a delta between what we think the value is what the world thinks the value

is with the one difference between you and SpaceX. And one reason why you would consider the public

market is not just for, you know, like you could do it on a direct listing when you're not even like kind of necessarily raising like a big primary chump at least immediately. But it does provide effectively a billboard for the company, you know, CNBC gets to talk about you every day for all the good and the bad that comes with that. SpaceX has like giant billboards that they send up into the sky, you know, on a regular basis that they get broadcast of. So like there is a there is a like advertising to clients that you are a company that exists and a company that is like very healthy and stable, hopefully if the stock market is treating you well. How do you think about that of like the revenue growth that could come if you were to kind of IPO and go through the the rigmarole of the public markets? We're not currently growth constrained. We're growing so fast. And so there's and there's so much low hanging fruit when it comes to sales and marketing and even expansion within our existing client base, that it's not like we don't necessarily need, you know, to shout from the rooftops and use the public markets as a marketing channel. While you're right, there's a long list of pros and cons to going public. I went through a pretty extensive exercise, and it was pretty clear that the cons outweighed the pros for me. You know, a few of the, I'd say one of the biggest cons is the short termism. It gets everyone focused on what everyone else thinks. So if you're trying to build a culture that is driven by first principles analysis and driven by long term thinking, a great way to ruin that culture is by going public.

So you don't want to ruin your culture?

I don't really doubt. No, no. And there's also there's also control value. There's a famous, you know, story of, you know, Napoleon, just defeating five armies with one army that was,

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you know, smaller than any one of the five of them. And how did he do it? Well, those five armies were so busy trying to coordinate and figure out what to do. You know, he was able to divide and conquer. And there's an incredible value in having control of a company because you can pursue contrarian strategies. In a public company, it's very, you tend to lose control. And therefore, everything sort of defaults to increasingly towards a consensus view, a consensus strategy. You get a bunch of what I call, you know, the professional managerial class that is pursuing best practices. And all of this sort of tends to approach beta, which is, you know, your IRRs will tend to become the S&P 500s IRRs, you're going to get 8 to 12% on average over any 20 year period. Whereas we're shooting for legendary IRRs, like multi decade, 28% plus IRRs. There's, you know, if we have three business Bibles at the company, the Bibles are number one outsiders by William Thorndike, who invested in the company this year, put in half a million dollars. And that is a book about capital allocation that has informed a lot of our strategy on this. And it's a very, you know, counterintuitive. You think the best CEOs are people like Jack Welch, you know, great managers and sort of very charismatic, but some of the best CEOs are really focused on financial strategy. And so the book details how to do it. And a lot of the stuff I've even shared on this podcast about the way we're thinking really comes from that. Two, by the way, a classic example of that is acquisitions. You know, if you're focused on growing enterprise value, you want to acquire as many companies as possible and even use stock to do it. And you just grow and grow your enterprise value. But in the process of buying companies with stock, you're diluting your shareholders and destroying shareholder value and 75% of acquisitions destroy shareholder value. So that's an example of something you might learn from outsiders. Second book that's a Bible for us is Seven Powers by Hamilton Helmer, also a friend of the company, there's a book about defensibility. How do you build a moat? How do you build barriers to entry? Not just benefits for your clients, but how do you make sure that the benefits that you have are benefits that can't be easily copied? And then the third is the innovators dilemma by Clayton Christensen, which is actually something we're facing, which is as one of our businesses is in hyperscale mode. It increasingly, you know, becomes very difficult to divert time, energy, and resources into diversification. And you have to be incredibly strategic about diversifying. Otherwise, you end up hyper concentrated in this very specific market, where you're always attacking up market, attacking up market, and then you just end up, you know, exposed. You're talking about AI training versus which is hyper scaling. Yeah. Yeah. Yes. That makes sense. That's right. Well, Francis, it is always a joy to speak with you. You have such interesting perspective on how things should work. I do wonder, I do wonder, in fact, I suspect, I suspect you are going to revisit the IPO question. Are you sitting with self interest here? No, no, no, no. I mean, I am like, you know, we do private and public, but it's more like, at some point, you have to compete in the big leagues. And it really is the pro game. And the pro game requires you to be able to have a culture that's strong enough to surf across the short termism that the market implies. And there is no future circumstance, I can imagine, where the largest AI enabled servicing company in the world, which is what you're on trajectory to become, let's say, is not also something that is publicly

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listed. And so if you're going to deliver legendary AI or R, actually, I think doing so will in some way be conditional upon having at least an audited set of books that you're producing for people so they can say, hey, this is the company. We're relying. We have audited financials. Well, yes, but I'm saying that it's not just audited financials, it's also kind of like the knowing that the business is being kind of like unpacked and poked at by by its strongest critics, which is really what, you know, being public with your information invites and being in the public market invites, it's like, can you withstand kind of like that criticism? I think that's critical for companies to trust you in a robust and profound way with kind of like their operational integrity, which is ultimately what you're going to be asking for. And so I think that you're going you're going to need it. You're going to need it to be as big as you possibly can. And by big, I mean, I mean, not big, just enterprise value big, big shareholder value big. And so this is why Brett is one of my favorite people to get advice from because he is the courage to disagree. And and then I'm not sure I have the courage to disagree with Brett, because he's one of the smartest people in the world. But let me let me just, while you're probably right, and we will, we will ultimately make the right decision for the company. We see an opportunity to shrink the shrink the number of shares by 25 to 50% over the next seven years. And if you had a business that was going to generate 20, at least 24 million or more of profit next year, 60 million or more the following year, over 100 million the following year after that. And you were able to do that while paying down debt, reinvesting in the business, growing the balance sheet and financing M&A. Would you really go public? Why? And there are other ways of creating trust, there are other ways of marketing. That's true. I'm not saying it's the right decision now. I'm saying you will cross that threshold. I'm saying you cannot, you cannot say you've made the decision not to do it and then perpetually say, okay, that decision is made. I think that there's a deep in liquid capital market becomes like an incredibly valuable, particularly like, okay, and then from a high level, like we think that kind of there's going to be right now, honestly, being in the public markets is not that fun, low and behold. But over the course of this business cycle, there's going to be a huge tailwind to innovation. And so just from a having having access in a corporate sense to that, that checkbook, you can also, you know, strategically use that in interesting and sometimes profound ways, in a way that you can't, if they're privately listed, or at least not with the same agility as in like you can, you can make a decision to raise equity, but you can't like do a secondary within a month that raises a ton of equity or use it for M&A purposes. So we will return to that debate when we have you back because I always love having you. Thank you. It's great speaking to you, Francis. This has been FYI, the For Your Innovation podcast. And if anybody has is curious about how to use HI to actually make their business work, I'd suggest talking to Invisible because they know what they're doing. And Francis is a good hang. All right. Thanks much. Cheers.

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