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Chile: Launching a Global Entrepreneurship Hub (Entire Talk)

Juan Andrés Fontaine, *Chilean Government*

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Juan Andrés Fontaine, Chile's Minister of Economy, Development and Tourism, discusses his government's recent practices and programs that strive to develop Chile's entrepreneurial ecosystem. Topics touched upon include government incentive programs to attract international investment, growth and development to Chile's university research and development, and a desire to build the nation into the innovation hub of South America.



Transcript

Juan Andres Fontaine has degrees in Economics from the University Catolica of Chile and from the University of Chicago. He's been a research director of the Central Bank of Chile, a professor of some at the major universities in Chile, and a visiting professor at UCLA. He's been the Minister of Economy of Chile for only six months. So we actually today have an opportunity to influence him as we ask him some questions, and give him some guidance about what he can do to change the country. Without further ado, Minister. Thank you, Tina, for this invitation, this opportunity to address all these people here, young talents, that are going to change the world, I think, in the future. And thank you for the opportunity to be inaugurating this excellent auditorium. Well, let me first say a few words about myself. I'm not an entrepreneur. I've never started up a company.

I'm a public policy guy, basically. I've been trained as an economist. And I have been fortunate actually to participate in two crucial instances in the recent history of Chile. One was 25 years ago when we had a very big crisis, and I was able to work then in the team that actually solved the situation and well, have Chile to take off and have a very successful performance in the next years. And then, again, this time I've been called to serve in the government with a clear mandate to help draw policies that would increase productivity and get Chile to become developed country during this decade. That's the mission that President Pinera has set for us. So this is very challenging. We're different generations of course. Some of you may think as a bit distant, this idea or this love for public policies. You're a more private-oriented people.

In my generations, we used to think that in order to change the world you have to make a revolution. Some people around here were maybe wearing flowers in their heads and trying to make a revolution through peace and love. Others around the world were doing less peaceful things to change the world and all those experiences failed actually. But we get very good for finding ways through public policy to change the world. And I have the opportunity of doing that in a sense in Chile, of participating in this creation of new way of managing Chile, sort of a startup for the nation, which has the orientation of actually widening the room for people to innovate. So instead of changing the world through revolution, to change the world through innovation, which is what you will see here in Silicon Valley, very easy. So going a bit for the presentation while I come from Chile, and probably not many of you are familiar with Chile. Chile is a small country, 17 million people. The size of the GDP measuring in equivalent dollars is more or less the size of Singapore, Ireland, Portugal are around these numbers, more or less the total size of the economy. But of course, our per capita income is much lower than those other countries.

Well, that's why we are classified as upper middle income. We're rich in exports of copper, fruit, wine, and things like that. And we are famous for interesting things as Pablo Neruda, Easter Island, and so on. That's the country where I come from. And this is our recent history, which we had this period from around 1970 to around 1985 which many awful things happened in

Chile. And the economy was basically chopped on a low-growth path, ride by inflation. And of course, people were frustrated and that tend to create the wrong kind of answers, social policies instead of actually opening up the room for innovation, creativity, and so on were very "interventionistic" and tended to make things worse. We have the big crisis I mentioned in the mid '80's which has some similarities to the crisis of the US has undergone the last couple of years. And then, we have that takeoff which was engineered by a number of policies. I worked from the Central Bank as a macroeconomist there.

And we have that very strong growth for about 12 years, growing at around 8% a year and up to the point there when we got to the Asian crisis. Chile has a lot of connections with Asia because about 40% of our exports goes to Asia. So when the Asian crisis hit Malaysia, it hit us also quite strongly. And we have that slowdown in growth and in productivity that you see there. And so, after those 12 years of very fast growth as if we got tired and we got 12 years of what we call the "siesta" period in which actually productivity tended to stagnate. And as I mentioned the mission we have is to speed up growth through increasing productivity and growth. And to achieve this stage, or to cross the threshold of development during this decade we would need to increase our per capita income from \$15,000 to around 23 by the end of the decade which would put us at the level of the lowest developed countries these days, which is the level that Portugal has for example, or the Czech Republic is close to that, to the purple column there would be our target. Now, to get to that level we have to increase the rate of growth of the economy to about 6% per year. And we are starting on the right track. In that sense, this year we are going to grow close to 5.5% after having a very, very terrible earthquake at the beginning of the year.

So that of course affects initially. The first half of the year had been very much affected by that. But we are speeding up and estimations are that we are going to get to grow at around 6 or 6.5% next year. So we are in the right track. And we feel we have all the potentialities of actually accelerating growth because as I mentioned, 40% of our exports go to Asia. Asia of course is a very fast growing region these days. We produced many of those commodities for which the Asian countries lack. And we are for obvious reasons very connected with Latin American countries, with Brazil for example, which is another fast-growing country these days. The Brazilian tide is going to lift all Latin American boats and we are going to benefit from that. Chilean companies have become very globally oriented among our main exporters.

We have top of the word exporters in copper, in salmon, in wine, in wood pulp. Some other companies that have become sort of leaders in this multi-Latins that are investing in many Latin American countries in retail, in airline, and other sectors. We have this new company starting, but we think we need to accelerate this process. That's a 6% growth that would take us by the end of the decade to become a developed country. And to accelerate that growth, what we need is to foster innovation and entrepreneurship. And that's why we are setting a number of policies that go in that direction that would basically try to get Chile to be the innovation hub of South America by interconnecting us with the innovation centers of the world. And of course, the most important of all, Silicon Valley. That's why we have there that connection. We are doing a number of things to actually get to this result, one of them, I can answer this very specific questions other subjects but what we are doing is startup program that's going to connect Chile with California and which is in the line of actually exploiting this long history of interconnection between Chile and California which as you know are very similar in terms of landscape. We have the same kind of deserts, the same kind of vineyards, the same kind of coastline.

They are amazingly similar. So our aim is to replicate the similarity in terms of landscape now, in terms of economics and innovation. And who knows, perhaps 30 or 50 years from now, Chile is going to be as California is today with the help of innovators. And we are going to try to bring those innovation to Chile. And to do that, we have this startup Chile program in which we are attracting young, talented, entrepreneurs probably after finishing or graduating here or in other universities of the world to go to Chile to do the early stages of their innovation in Chile. And we are facilitating the process, granting some money for a six-month period and other facilities in order for them to settle there. Why do that? Because we think that in order to get this innovation culture going in Chile, we need to create a critical mass of people doing this, and to have these strong connections with innovation centers of the world. So you are all invited to apply to this program when you finish your studies and thank you for your patience. That was a fabulous setup and I got a whole bunch of specific questions. I'm actually lucky enough that I got to spend six weeks in Chile at the end of the year.

So I got to get to know the country pretty well. I got to travel pretty broadly. And was completely, totally, enchanted by the country. And I'm wondering for you, as a new government official, what leverage do you have to make changes in the country? I mean, obviously there are some things that you can control, and there are some things you can't. What are the types of things you're trying to do and what levers do you have to control them? Well, as you know Tina, the innovation or entrepreneurship ecosystem you have many, many parts of it. What we can control relatively easily is the legal and governmental policies. And we are doing that in terms of, for example, lifting regulatory and bureaucratic barriers to entrepreneurship. There are many of them. New politicians typically do as part of their jobs, create this kind of barriers and regulations, things of that sort. We have to be careful.

Well, some of them are necessary of course, but others are just useless and I want to eliminate them. We are doing that on a very consistent way. We are also trying to review visa procedures. For example, the experience here of course, is that

immigration is a very powerful source of innovation. We want to welcome immigration to Chile but in order to do that in a practical way, we have to actually review the visa procedures. There are number of things of that sort that we're doing. Terrific. Now, when you look at Silicon Valley, what things inspire you here? What things do you have to replicate when you came here with a lot of your colleagues. You've been here many times before. What are the things that you look at as models? "Boy, I would really like to replicate this back at home." Well, what I see here is a very, very powerful and productive combination of academia, of high-level science, and entrepreneurial spirit.

And the way to make that combination is what we want to do really. We do have good scientists in Chile, for example. We do have good entrepreneurs but there's not that much of a connection between the two. What we want to replicate is that in order to have Chile become an innovation hub in South America. So what are you doing to make that happen? Well as I mentioned, some things are related to connecting with other successful centers as Silicon Valley. We are bringing entrepreneurs here and taking young entrepreneurs to Chile. We are attracting IT companies to locate in Chile. We are attracting centers of excellence to locate in Chile through government support in addition to the standard government support for education, scholarships abroad, large program of scholarship abroad in Chile, and the funding for R and D. Great. Now, there are a lot things that we know makes Silicon Valley a really successful place for entrepreneurs and people who want to bring their ideas to life.

One of them is that there is a real tolerance for failure. And people know that if they try something, that they take a risk, and it doesn't work out, that's not the end. That they're going to have many other opportunities to try again. Tell us a little bit about that culture in Chile. Is this something that is the same or different? Well, there we have problems, clearly. And the sort of problems that are not easy to tackle because there's a deep cultural problem there. There's some distrust in Chile, and so people tend to think that when someone fails, it's because he was committing a fraud, or he has intention to actually fail. That's the typical suspicion. And that's to be overcome gradually, I think. In the meantime, what we are doing though, which can be done, is to change the bankruptcy law.

Our bankruptcy law creates a problem in a sense because it's very easily from standard bankruptcy procedure to become charged for fraud. And so, that of course tend to exaggerate this kind of social stigma on people that they go through failure. Great. So it sounds like it's something you're thinking about. Yes, yes. Very much indeed. Now, there are other things that are very important in this culture here. What is that we have a strong venture capital, risk capital investments. People are willing to put money down on ideas that are really, really new that are really pretty risky. Does that exist in Chile? Yes.

We have a young venture capital industry that is supported by call for the development agency of the government. And it is working. They have money. They have close to \$300 million not yet invested because they complain that there are not enough projects, or not enough entrepreneurs in Chile. Although some entrepreneurs complain the other way around. So we have the elements there. I tend to think in general though. Venture capital is very important clearly but one has to be clear in this. I think, actually, money follows good ideas - and it's not the other way around. So the crucial thing is to have the good ideas.

When you have a good idea, money is going to come in. And we do have capital market that is capable of doing that. I think partially, and of course there is a world market also that can access to Silicon Valley, or to Wall Street, or whatever and get financing there. Great. So one of the other things that this area is known for is having lots and lots of local role models. You can look around this room and see lots of people probably who have started companies in our midst right here. And so, you can clearly see the people you, look like you, "Boy, you look like me, you sound like me, and you've been in my classes." You know, if you did it. I can do it, too and people also very generous in sharing their insights and their experience and their network. Are there those types of role models there? Such people can look and say, "Wow, this person did it. You know, I can do it too." We certainly have them.

We have not exploited the role models so much, but we're working on that. And this mission, myself here with my team, we brought here 11 entrepreneurs which are in the initial stages of the process which we think they have a high impact likely to have a high potential. And we would like to have them to become those models. So we're doing that. I got the chance to meet them this morning. They're really impressive. I think so, too. But one of the big issues that come up is that people often don't understand that there are really different types of entrepreneurship. There is necessity entrepreneurship. You know those people who have gotten to start a business that, you know, supports their family.

And it's very limited in its potential. And then, there is a sort of opportunity entrepreneurs who start things that are very scalable, and have a potential of really grow quite large. Do people differentiate between that? Do you differentiate? Do you have a goal to develop one versus the other? Well, there is nothing wrong with the first variety in the sense, because small businesses are needed and so on. So that's happening anyway, and we are lifting barriers to foster the creation of starting up businesses in Chile. But of course, the real growth of the economy, the growth of productivity is going to come from companies that don't have a vocation to remain small. Exactly the opposite, have the vocation to grow and not only in Chile but also abroad. So the second kind of entrepreneurship is one we would like the most. Great. And you know, there are a lot of companies, especially in small countries, try to be global from the get go. I mean, is that something that these companies are

doing that you talk about? These new entrepreneurs, that they're starting at with the mind that their companies are global business even from the day they start? Well, that's the idea and that's happening in a sense because we are a very small market and very open economy.

We have trade agreements with about 50 countries. We have very low import ties. So it's a poorly outboard-oriented economy. So it's very natural for an entrepreneur born in Chile to be thinking of exporting. OK. So let's look at the other side around though. One of the benefits of being in Silicon Valley is this huge influx of people from all over the world with different ideas, with different cultures, with different all of the resource they bring in. In fact, if you look at this room, it looks like the UN, right? We've got people here from all over the world. You know, when I go to Chile, I don't see that. So is that something that you see as a challenge to, you know, instead of having people in Chile looking outward to the rest of the world, to have the rest of the world coming to Chile? Well, we welcome that happening.

And as we start growing fast and having investments coming and demand for high qualified profession, and things of that sort we are going to get, I think, that inflow of people coming to Chile. We do have it at a small rate these days but it's going to increase significantly, I think, in the future. For investment, we are attracting IT companies to settle in Chile and that's going to create that movement. We have to review, as I said, the visa procedures. Well, we have some problems there and we're working on those. But clearly, we think that the consequence of this strategy is going to be to change the mixture of Chile people you see on the streets of Chile to resemble more of what we see here. Great. Terrific. Now, you talk about visa issues. You know, there are all these little things that end up having a really big impact on people's ability to show up there, and then essentially turn their ideas into companies.

What are the variables that you're thinking about? Are there things that actually work better in Chile than here? Are there things that, you go, "Wow, this is something I should really advertise that we've got these resources that actually don't exist anywhere else." Well, first of all, as I said we are situated in a location that is very unique, you know, to explore the growth of the emerging world. And we think, growth is going to come in the near future or from the emerging world both Asia and South America, or Latin America. Second, we have open free market environment that is good for starting businesses. And third, we have low costs, which of course helps a lot. So in comparison with Silicon Valley, let's say, that variable is crucial. We have much lower cost producer in many services and that helps to foster businesses there. Great. Now, I know you're launch is really interesting new initiative to start up Chile to entice, you know, folks from around the world to start their companies in Chile. I think it's really a bold move. So maybe you could tell us a little bit about what this is about or what do people get? I mean, if I decide I want to come to Chile and start my company there, what are you going to give me? What we're doing is to offer \$40,000 for people that go to Chile.

That's a grant. They'll get that grant for doing their early stages of their project in Chile. And we help them with the other facilities and offices, of things of that sort to settle there on the condition they have to comply. First, the project has to be approved by a board. So they have to apply for that approval. And they have to be there and interact with Chilean entrepreneurs. To give few talks of what they're doing because what we want to get from this is the interaction, the critical mass that creates interaction between the Chilean people, entrepreneurs, and these entrepreneurs we're bringing from the rest of the world. And to do that, we need that kind of conversation to take place. And the only thing we want is that these entrepreneurs after they spend six months or a year in Chile, they are going to move probably here or some other place and we want them to get connected to Chile. The best way to actually get this interconnection with these innovation centers of the world that I was mentioning is through people.

In the end, this is basically a matter of getting to know the other people and this is the way to do it. That's what we want to get from them. So it's a nice way of inviting people down there and spend some time and get to know the country. Now, let's change gears a little bit. I mean, here we are in a university. And I know that I spend a lot of time with the universities in Chile and I'm curious what is happening in the universities there to stimulate this type of thinking? Because certainly, you know, we have a room for students here who are thinking about what can I learn in the classroom and the extracurricular programs that will prepare me to enter this entrepreneurial world? What's happening in the universities in Chile to make that happen? Well, we do have good universities in terms of the training, the quality of the professors and all the curriculum. But they have been focused basically on sciences or other typical subjects, not that much on training entrepreneurship. And with your help, Tina and others, they are now focusing that. And that's a revolution that is happening in Chilean universities these days that's going to change partly the curriculum. But also the way the professors see the role, because we're not use for example, having a science professor thinking in terms of patents, of research, or engineering professors thinking in terms of startups.

That's something a bit new for us. But that is changing these days. So what sort of things do you want your students to learn? What would you hope they would come out of school knowing or prepared to do? Well, that depends on the subject of course. Related to innovation and entrepreneurship. Well, basically to have this frame of mind that actually gets them to think in terms of problems that have to be solved. And there is a value of actually finding out the way to solve the problem and to be willing to take the risks, to gradually benefits of that, and bear the costs of eventual failure. That kind of entrepreneurial frame of

mind is what we want to teach basically. I'm going to open it up to questions from the audience. OK, looks like we've got the first one over here. Hello, well first of all, I want to give update, a small fact on myself.

I'm actually a Chilean. I've grown from the Latin Chile, and I came to study here as an undergrad. So I've actually gotten to experience a lot of the youth. I know a lot of the youth mentality in both places in the Silicon Valley, my friends here at Stanford, and Tina, I was actually during the summer went there to Chile. I've worked two years at Catolica and engineering students there and engineering professors. And one thing that strikes me about the two cultures, in Silicon Valley culture and the Chile culture. Well, first of all, engineering people here, it's more common to go into electrical engineering, bioengineering, computer science engineering, and non-traditional areas of engineering, whereas in Chile most engineering majors are going into industrial engineering which will be equivalent of management science and engineering, which is great because the country needs great managers to start. But the youth doesn't have this mentality of developing new technologies in Chile. Whereas, I have many friends here, who are already thinking of ideas in their second year of college, already thinking of technological ideas and make the world a better place. Right.

Do you have a question? [Laughter] That's a terrific observation. I'm wondering if you have a question. Audience 1: No, no. It's related to a question. I feel that just because it's not... Do you think there's nothing the Chilean government can do to change that mentality in the youth? Well, who we're discussing? The rule of role model is exactly that one. I have to actually create that example and then motivate people to do that to become innovators in those areas. But I share of you that we have that weakness and we are working on that, to solve that. My question would be if you went to other universities around the United States, would it be different? Is Stanford unique in the United States, or is it something that you would find anywhere around the country? So that would be something that. Great.

Another question back there. Audience 2: Russia is also currently trying to rebuild or replicate Silicon Valley. Have you learned or is Chile in any way working, or looking at what they're doing and try to modify your system? Well, it's a different kind of strategy. It's sort of a top-down strategy. Would you fund that as a project and settle, whatever, find a piece of land, develop the buildings, and so on, and try to create the physical resemblance of Silicon Valley. We're not actually wanting to replicate Silicon Valley. It would be useless. What we're doing is to try to interconnect, to improving the way people move from these two places and through that means, basically, fostering entrepreneurship in Chile. Different sort of approach, I would say. Over here, yes.

Audience 3: So, even technology. Why is it that people are so interested in replicating Silicon Valley and not, perhaps, starting some other kind of economy that is perhaps more of a fit for their resources and their culture of risk-aversion? Well, I wouldn't say that the Chileans are particularly risk-averse. First of all, we are a mining country. Mine cycles, they're awful. The price oscillates a lot, and so there's a lot of risk in being a miner. And we, because of the different reasons of our history, have been a very unstable country in the past. So businessman in Chile are very used to live and somehow learn to prosper in a very risky environment. It's only that we have to redirect now the kind of sectors in which they would have to invest. And our natural resources, for example, in the case of agriculture or fishing, the kind of activities can attract a lot of innovations in terms of genetic engineering, things of that sort. For example, biotech has a very natural place in Chile also.

Audience 4: How do you think... No I don't think that would be a problem. We are a very open economy. We are used to compete in the world, in terms of our products. We tend to be, I think, quite friendly with visitors and foreign people coming to Chile. So I don't think that that would be much of a problem, really. Audience 5: So a lot of countries are being on the idea of collaborative consumption and those third part companies are encouraging their users to share items, like gloves, accommodations, bicycles, cars, stuff like that. What is Chile's stance on collaborative consumption? Nothing, to my knowledge, to be honest. Audience 5: Do you think it would be a battle to introduce that market into Chile? ...to Chile from the government perspective? Could be, could be. From the government perspective these days is not the priority.

But it could be in the future. I think what she's getting at, can I re-state this a little bit, is that there's a tremendous interest in doing things that are environmentally friendly and environmentally sustainable. And as you're building a new sort of economy, is that something that is important to you? Audience 5: Not only sustainability but things like Groupon, where you're interacting as a group to proliferate an idea. Couch surfing, where you get a bunch of people together sharing these things. Car sharing... Well, to some extent countries are not as developed as this one, that happens naturally and that's borrowing. That's the way of surviving with the poor. Regarding environmental concerns, of course, in the case of energy, we are looking at ways of nonconventional energy sources and things of that sort, that are going to be more environmentally friendly. Great. Yup.

Audience 6: The Silicon Valley here, and like the innovation center in India that was on your map, were pretty naturally and organically created. They came up on their own, without any government support. In Chile, you're trying to, through government support, make this happen. Do you think there's a risk in...without government support, this will fizzle out... Well, actually we are not pumping much money. This is not top-down program or spending large amounts of budget in terms of R and D or certain sectors, whatever. What we are is a sort of a surgical intervention we are doing. We are trying to remove certain bottlenecks, barriers, things of that sort that somehow creating the problem and in order to unleash the natural

entrepreneurial spirit we think it's there in Chile. That's basically what we are trying to do. Great.

Yes. Audience 7: It seems like investors always go to the highest return industry. Chile has very rich resources like copper. And copper prices have started to really soar high. So initially high tech sector. How will you have this kind of high tech industry without some kind of resource first? Well, we have significant non-copper activities like agriculture, fishing, like others, salmon industry for example and all those, in order to survive in an environment that is very competitive in the world in which cost even in Chile are rising a bit because of the currency effects of the copper boom, and so on, they need to innovate and increase the productivity through introducing technological advances. So we think the scenario is there for this happening. Audience 8: My name is.... I'm Chilean and I'm getting my PhD in biomedical engineering. As you mentioned, we have a lot of similarities in California and Chile, one which is not very nice which are earthquakes.

Also, you mentioned we were hit by the fifth largest earthquake in the world history back in February. But even though we did quite well we still have government loss close to \$20 to \$30 billion. So I was wondering what are we doing in terms of bringing innovation from here to Chile and even last year we have amazing. Has there been something formal? Well, something is going on that I'm not too familiar with but let me say that I think that our construction, engineering in Chile did very well after the quake. Because after having such a strong earthquake, 8.8 degrees, one of the fifth strongest in the world, the amount of destruction is amazingly low, actually. Those numbers, the \$20 or \$30 billion, looks high as I mentioned in dollars. But the percentage of the capital stock of Chile is not that large. So actually we did well, I think. And in terms of rebuilding of the country, of course, every earthquake teaches a lot of lessons. And we are benefiting from them.

And in addition to that, something that sounds strange but actually is going on is that the earthquakes help to increase productivity. Because when you rebuild, you will rebuild better structures than the ones you previously had. And so, productivity is going to increase because of that, I think. Tina: Great. Audience 9: Actually, I've got three questions. You can have one question. There are lots of questions. Audience 9: OK. So we are talking about attracting companies from other countries. One problem they may face is culture strike.

Has there been any measure to assist them to integrate into local culture? For example, political environments, cultural environment, legal environment, these kinds of things. Yeah. Well, yes. This program we have in the IT companies that want to locate in Chile to offer global services, they do it in connection with a core for the development agency in Chile. And they get some help of that sort. But in addition to that, we have a large professional community in Chile that is used to work with foreign investors because the country has a lot of foreign investment. So also, naturally it takes place in the sense that they find a way to get some help. I focus on the students. Oh, that is, what advice do you have for the California government? I don't know that much about California to give advice. Audience 10: In terms of the various interests of the governments...

Juan Andres Fontaine: The various interest for... Audience 10: In the business right? So we.... I don't know really what are the variants here. What we do see in Chile is that because the political process tends to create a lot of regulations; some of them are useful, some of them just create artificial barriers for entering to new businesses, or to start new investments, and so on. And we are trying to lift them. You know the World Bank is doing business ranking. It compares countries across the world. We have been declining in that ranking. And we lost about nine positions in the last year. So we have to make up for that, to solve that problem by improving there.

The US as a whole is, of course, very well ranked in that ranking. We've question in the middle. Audience 11: So thank you very much for being here. I did listen to some measures that you will try to apply in the next years to get StartUP Chile working. So I want to ask you about specific targets. I mean, specific ratios or measures you will be working at over the next years just to evaluate the problem, and say it has been a success or failure. Well, regarding specifically, startup program, that's a tough question because actually since the results are going to be seen in that long term we are going to have a problem there of establishing criteria or a metric for success. But the general idea is to create this innovation culture that creates innovation that is valued by the market, that has a value in the market. And one way to measure that, a simple metric would be to look at the number of companies, Chilean-born companies, that are traded in NASDAQ. That's a very simple metric.

Today is zero. So we have the starting percentage is easy. And this is a target we have been mentioning and setting for the Chilean business community. Let's see how many of you are able to develop a company that is going to end up being traded at NASDAQ. And in the case of the StartUP Chile program, we are going to claim that the ideas that have been developed from those guys that went to Chile in the startup programs are Chilean companies. Got a question over here. Audience 12: Hi, I'm from Mexico and I was just working on a project for the Ministry of Economy in Mexico. And they were asking us...what were the bottlenecks for innovation? We were just giving them some, but I was wondering what is the Ministry of Economy doing to support or to increase the link between the universities and the industries? ...you're going to need to bring all these startups.... Well, many things, but we have a program that is giving financial support for centers of excellency, international centers that locate in Chile and they do that on a joint venture with a Chilean university. And they provide services basically to the business community.

So that's one way we are doing it. Another one is that, we have a tax credit system in which the companies get the tax credit. And they do their R and D with universities, or research scientist in general. So that's again something we're doing. We're also working in trying to help the university to somehow push them to look at patents and the patent system as a very important piece of the puzzle. And they are starting to do it. So that's another idea. We are doing a lot of things of that sort. Audience 13: The other thing about Silicon Valley as an entrepreneurship hub is that... Now I wanted to essentially build an entrepreneurial spirit in Chile.

Are you trying to vitalize the economic side, the technological side, or both? Are you trying to make Chile an economic center, or are you trying to approach those technology... Basically, we want Chile to be a center of the application of ideas to create value. And those ideas may come from technological advances, or may come just to the employment of the technological advances that are already there in a way that nobody has thought before. Both things, actually. Audience 14: What does Chile have in terms of government research funds? Here in United States the government spends a lot of money. We have large government labs and universities develop technologies. Most of the graduate students here in one way are probably funded by the government. I'm talking of graduate students in engineering and sciences. I think most people here would agree that Silicon Valley as a result of many things but government labs and national labs in Stanford. What does Chile have? Well, we do have sort of a national science foundation in Chile that's granting money for research for the last 30 years.

Of course, that scale is different from what you have here but we do have that support and research on a competitive basis. And we want to expand that in Chile. In addition to that, we have a tax credit for companies doing R and D and we want to expand also that. Great. Question? Audience 15: I have a question about a specific... Sorry, what? Audience 15: Frugal innovation.... We are not very familiar really with those. Sorry, but Great. Yeah, Audience 16: You just mentioned that you're going to invest \$40,000...

I'm just going to repeat the question for those folks in the podcast, is that, "Where is the \$40,000 per venture coming from, and basically what's the return on that investment you are expecting? Well, this is a pilot program. We set a limited amount of money that we have been devoting for this. So people are going to compete for this. And we're going to see what happens. That way if the pilot works well, we want to scale it, and we are going to look for, probably, private money to actually expand it. And what would the return be? As I said, it's not something very tangible in a sense. What we are trying to is to develop the innovation culture and we think that creating this critical mass of people doing innovations in Chile is going to help in that direction. And it's a small amount of money we are going to invest in this, in terms of the total fiscal budget. We are very conservative fiscal people. We are not actually engaging in large public investment program regarding innovation and things of that sort.

These are very limited intervention. You know, to get the thing moving, basically. Great. We're going to take one more question. Carolyn. Audience 17: You mentioned that Chile is looking at successful companies publicly traded as the measure of success. But you also said that Chile is trying to overcome this notion that failure is a bad thing. So how do you target for success but also try to foster tolerance for failure? I see no contradiction because you know to get to be successful, you have to be willing to fail. Audience 17: Is that concept acceptable in Chile right now? Well, we're trying to instill that culture in Chile. This is a work in progress, but we are moving in that direction.

Audience 17: So my question is, how are you trying to do that? Well, through the role models we talk about, through this interconnection with places like Silicon Valley which that culture is already there. You can see it. You can sense it. Through some legal changes of the bankruptcy law that we are going to change that tends to create that resistance or bias against taking risks. For some number of things we are doing. Well I just want to say I have been incredibly impressed with everything I've seen. The spirit of entrepreneurship in the faculty I've worked with there, the students I have met there, and also as you showed in the pictures, the diversity of resources in Chile is totally remarkable. I mean, from the fisheries, and the wineries, and the agriculture and ecotourism, the mines. I mean, it's really quite amazing. And I can't wait to see what happens over the next years as you try all these experiments.

I mean, you really are being very entrepreneurial by trying these experiments and we wish you the very best of luck. Thanks a lot. Thank you, thank you.