



The Economic Club of New York

Eric Schmidt
Former Chairman and
Chief Executive Officer
Google & Alphabet

The Technological Response to COVID-19

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Interviewer: Marie-Josée Kravis
Chairman, The Economic Club of New York
Senior Fellow, The Hudson Institute

Introduction

Chairman Marie-Josée Kravis

So good afternoon and welcome everyone. I'm Marie-Josée Kravis, the Chairman of The Economic Club of New York and a Senior Fellow at the Hudson Institute. And I want to thank all of you for joining us, and I hope that you and your families are well and continue to be safe and vigilant.

The Economic Club of New York is the nation's leading nonpartisan forum for discussions of economic, social and political issues, and we find that at this time with the coronavirus crisis ongoing, it's very important that we bring our members the day's most relevant discussion topics. And I extend a special welcome to members of The Economic Clubs of Chicago and Washington, D.C. as well as those from the New York Women's Forum and the British American Business who have also been invited to join our call today and to join in our discussions.

We're particularly fortunate today to host once again – I think it's the third time – Eric Schmidt, the former Chair and CEO at Google and Alphabet. Eric joined Google in 2001 and helped grow the company from a Silicon Valley startup to a global leader in technology. He served as Google's Chief Executive from 2001 to 2011, became Executive Chairman from 2011 to 2018, and then became a Technical Advisor to

Google, or to Alphabet.

Prior to Google, Eric held leadership roles at Novell and Sun Microsystems. Currently, he's Chairman of the Department of Defense's Innovation Board and he was awarded the Medal for Distinguished Public Service by Secretary of Defense Ashton Carter. Eric is also a member of NASA's National Space Council User Advisory Group.

He is the co-author of *The New Digital Age*, *How Google Works*, *Trillion Dollar Coach*, and serves on the boards of the Mayo Clinic and the Broad Institute. He's a Gulfstream pilot, and his philanthropic efforts through The Schmidt Family Foundation focus on climate change, technology, the natural sciences, biomedicine, and engineering.

So the format today will begin with a few remarks from Eric followed by a conversation, which I'm fortunate to be moderating. Questions that were sent to the Club from members in advance I will try to integrate in this discussion. I should point out that this conversation is on the record. There are media on the line. And we will try to end promptly, or we must end promptly at 3:15. So, Eric, to you. And I want to thank you so much for taking the time. I know how busy you are and how involved you are in many aspects of this crisis.

Remarks by Eric Schmidt

Well, thank you Marie-Josée. And I really salute the Economic Clubs that are on and I really enjoy participating and I'm really glad that you all exist, especially in these sorts of crazy times. I think it's worth saying that what we're going through now has never actually happened in history since perhaps farming – a simultaneous crisis that applies to every single human being globally, all at the same time and all with devastating consequences. I also think it's important to state that we have both simultaneously an unprecedented health crisis – which people are very familiar with – as well as an unprecedented financial crisis. And I, for one, find it extraordinarily upsetting that we don't have a coherent plan for both, and I'd like to talk about what some of the elements of that would look like.

CHAIRMAN MARIE-JOSÉE KRAVIS: Well, let's begin with the health crisis if you allow. And I think one of the questions that's on everyone's mind, and it's come up from many members is, why were we so ill-prepared and so lacking in response with regard to both diagnostic testing and antibody testing? We're supposed to be a high-tech country. Why were we so poor at that?

ERIC SCHMIDT: Well, of course, the virus itself has not been seen before. And I, and you personally, and others have been philanthropically funding the medical research

into these areas. The curious thing to me – I'll say it personally – is that in California you have some of the leading biotech firms and yet until this past week there was essentially no scalable testing facilities in California. How is it possible that something which was identified in December, became obvious it was going to become a pandemic in January, and it's only now April. And in a pandemic you have the R-Number which is the multiplication factor which has been recently estimated higher, up to 5.8, 5.8 people infected without social distancing.

Of course, we're lower than that because of social distancing. It's amazing to me that when you're doubling every three days, there isn't some sort of alarm that goes off in society which says this is very different and it requires a coordinated response early. If you think about it, we probably were one month late in the way we organized ourselves, and that's what the historians will judge. And in that month, a large amount of money should have been applied to getting the genetic systems, the biological labs and so forth, to do scalable testing, scalable antibody development and so forth. It's now happening, but that month has caused us lives. We still don't know basic questions about this disease, including the fact of the number of how many asymptomatic carriers.

And the other thing that is particularly upsetting to me is we're not thinking about this the way we think about everything else. We're thinking about this as something which is happening to us that we're reacting to as opposed to as an information problem where

we don't have enough information. And had we said we need more information about this hidden killer, this hidden disease, and we'd organized around every conceivable mechanism of getting more information, we'd be much farther ahead. And I really feel sorry for the governors that are sitting there saying I want to open my economy, but how do I do it? And they're relying on intuition. We have top scientists in the world and we haven't gotten them together to answer these questions.

CHAIRMAN MARIE-JOSÉE KRAVIS: So how do you fix this organizational or information problem? I mean because it's one thing for diagnostic testing which is really important, but now we're talking about serology and we're talking about antibody testing and immunity passports or whatever you want to call them. It's going to be very important in terms of reopening the country that we do have this information. So how do you, how would you propose we go about it?

ERIC SCHMIDT: Well, first, there was something lacking in the CARES Act which was the billions of dollars that should have been allocated into pools to get people to work on this stuff quickly. And as I mentioned, private philanthropy, starting with Bill Gates and others, have come in to give large amounts of money to these research institutions to organize the teams. People want to work on this, but they either need money for reagents, right? So, for example, you'll have a bio-level lab. They're called BL1, 2, 3, 4. You have the right level of lab. You have the right level of people. You have the right

level of gowns. But you don't have the correct reagents in order to do testing of this new RNA and the vessel that contains it. Again, where was the, why did the government not act more quickly? And I think we won't know. But people will eventually figure it out. I think people were just not focused on the fact that this is a science problem as well. We didn't get the money. We didn't get it organized.

So now the answer, of course, is that the labs have enough money at least to get started. They need more. We need to do pre-buys of all the vaccines. I think that's been fairly well established. Just waste money if one of the vaccines doesn't work. At least it's an option. The vaccines are a long time away. I'm participating in a project to try to accelerate the development of vaccine over a six to nine-month time frame, which is sort of thought to be the quickest that it can be, but we don't know.

Meanwhile, we've got to come up with other solutions that increase the amount of information we have. Here's an example. Google and Apple announced this deal where they will use very privacy-protecting Bluetooth communication between phones where if your phone and mine phone are near each other, it will record that they were near without recording where you were or who you are. And if someone is exposed, then in theory you can push back through the network that, hey, by the way, you were near somebody, you should go get checked. That's a great innovation. I'm very proud of those teams for doing that. Why don't we have applications that, for example, can say

the number of people that you're likely to have encountered? Right? That's another piece of information. If I'm a person who saw 10,000 people, I'm more dangerous – if you will – than a person who saw 10 people. Right? It's a measure of dynamism. All of this is information we don't have.

CHAIRMAN MARIE-JOSÉE KRAVIS: Well, when we talk, I mean countries that have been “successful” because the story isn't over, but we refer oftentimes to South Korea or Germany or countries that introduced tracking in fact where they've done massive or more extensive diagnostic and then when they identify infected people, they track them. And that obviously raises the question of privacy. We talked a lot about surveillance capitalism before this crisis, but now it seems that tracking is one of the very important elements in dealing with this.

ERIC SCHMIDT: One of the problems, people want to use your phone to track people and track where you are, and even if it were legal which it probably isn't, it's not accurate enough for the kind of information that you want to understand disease progression. So if you look at the state of the art in the countries that have done this well, by the way they've all been countries with simpler governmental systems. Our is too complicated. We can't even decide if the President can shut down the states. We can't decide if the New York Mayor and the New York Governor, who gets to decide what's going on in the schools. And because you have a problem of decision making

within our country, you get confusion which leads to delay which leads to lack of action. But at the end of the day, what I want to know is I want to know how can I trust you? So you show up and you're wearing a mask. That's trust number one. We take your temperature. That's trust number two. But the presence of a mask and the presence of temperature, lack of temperature, is not a sufficient predictor that you're not, that you're not a spreader.

CHAIRMAN MARIE-JOSÉE KRAVIS: Exactly.

ERIC SCHMIDT: So I could use age, right? Young people, well, we don't know about young people. So you start going through the list and you can see how difficult this problem is without more information. I don't think the tech companies as a group will tackle this head-on because of all of the concerns over privacy.

So my guess is that each state will be left alone to try to figure out what sort of software information system to build. I, and others, have funded teams which have been trying to assemble all the health information globally around this disease from healthcare providers so we can answer basic questions. What is the course of the disease? How long are you asymptomatic before you get it? How long are you symptomatic in general? What is the effectiveness of the test? We still don't know basic things like antibodies. Do the antibodies actually confer resistance or not? We obviously would like

that. If you look at the successful countries, they've all followed a path of social distancing and then aggressive social interference. And we're not talking about that in the United States for whatever reason.

But the simplest way to think about the disease is if you quarantined everybody for 14 days to prevent any spread to anybody other than your household and you went to every household and you identified people who were ill and you somehow quarantined them further, right, within a month there would be a sharp V. It would be a terrible thing to do. But indeed that's what versions of South Korea, Germany, and Singapore have done. In America, we're not discussing that for whatever reason. So as a result, the tail will be longer. I've been looking at the history of 1918 by the way. It was very interesting that social distancing was understood at the time. And the historians say that the cities that did social distancing longer actually did better because their recovery was quicker and there was more trust in the system. So we have a real tension in our society between the very real pressure on people to open up the business and open up the society and the lack of information and the fear that might result. In 1918, by the way, there was a second wave three months later that was much worse than the first wave.

CHAIRMAN MARIE-JOSÉE KRAVIS: So, in terms of this information one of the things that you mentioned, you wrote an article recently in the Wall Street Journal about the lessons to be drawn from this crisis. And one of the points you made was the need for a

real-time digital infrastructure. Now, how does that come about in a country such as ours that is so fragmented where you have at least three levels of government and I'm excluding all of the other interveners in this whole process. I'm excluding even the business community as an agent or that prevents this kind of development. But when you have these three levels of government, of regulation, of interference and so on, how do you develop a real-time digital infrastructure at a national level?

ERIC SCHMIDT: So the, I don't know how to describe it. The best thing that we can do is focus on – let's see if I can say it clear – we benefit today from the internet and the internet companies in a profoundly powerful way. And think about what your life would be like in America without Amazon for example. The benefit of these corporations which we love to malign, right, in terms of the ability to communicate, the ability to deal with health, the ability to get information is profound. And I hope people will remember that when this thing is finally...

CHAIRMAN MARIE-JOSÉE KRAVIS: Well, we wouldn't be here today for example.

ERIC SCHMIDT: That's right. And so let's be a little bit grateful that these companies got the capital, did the investment, built the tools that we're using now and have really helped us out. Imagine having the same reality of this pandemic without those tools. It can clearly be much better. There's an obvious list of things that are going to happen.

So, for example, tele-health. People are now becoming comfortable with seeing the doctor virtually. It's more efficient for the doctor. There are plenty of examples where the phone picture can actually make your, can actually be more accurate with the doctor than the doctor by themselves.

The simple example is dermatologically – the dermatologist can actually take a picture of what your skin is going on, and the analysis can be done in real time and the dermatologist can have a better opinion as to what's going on. Plenty of examples of tele-health. Remote learning, we're now doing a massive experiment in remote learning, trying to find out how do kids learn remotely. And with that data we should be able to build better remote learning and distance learning tools which, when combined with the teacher – not to replace the teacher – will cause kids to learn better. We're learning that consumers can switch to retail and stay there. All of the retail industry is having a terribly tough time but they've all benefitted from their online presences. It's pretty clear to me that the supply chain is going to get re-architected. What people have begun to understand is that they're vulnerable to supply chain disruptions, especially with China and with nationalism brewing, and that vulnerability is a resilience problem. And so people are going to come up with additional capacity or other ways of doing either in-country manufacturing or other forms of sourcing. I mean I can go on. So these are all profound changes.

CHAIRMAN MARIE-JOSÉE KRAVIS: But you raise, for example, when you talk about telemedicine, I think one of the interesting things that happened during this crisis is that telemedicine was not reimbursed by Medicare or Medicaid except in rural areas. So that's changed and at least that's opening up. And we're now seeing, as you say, many more potential uses of telemedicine, not only in physical health but also mental health. It's a tremendous tool in terms of psychological and psychiatric interaction. But you also talk about tele-teaching or tele-learning. But when you think of it, as the economy is reshaped quickly to take on a more digitally oriented aspect, we're likely to have an employment hangover, or unemployment hangover I should say. We've already, we're going to lose in just four weeks a decade of job gains. And if we move, in addition, to a more digitally focused society, there's a real risk of an employment or unemployment hangover for a long time.

ERIC SCHMIDT: I'm very concerned about that as you are and you're, of course, the economist here. I think it's pretty clear that retraining and re-skilling becomes even more important in this scenario. And one way to think about it is that there are jobs being created by virtue of the digital platforms as well as there are jobs being lost because of a loss of faith in the analog system as your retail stores and so forth are shut down. So the society just needs to change more quickly to this new paradigm. You and I have also talked about the fact that we need to invest in 5G. So we need to get, to make sure that this infrastructure play that we have is now profound. If you look in retail, for

example, Amazon, Walmart, Costco, Target have all seen very significant growth and other brands in retail have been hurt. So it appears as though the distribution infrastructure, the networks, the winners are winning the majority of the share and the lesser parts of the infrastructure are suffering as a result. That's a normal consequence of network loss. So as you get a more network society, you tend to produce network winners which become the distribution platforms, the branding platforms and so forth, and they need to be the ones hiring.

CHAIRMAN MARIE-JOSÉE KRAVIS: I'm really interested, I'm glad that you mentioned 5G because of course you authored a report for the Defense Innovation Board where you pointed out how far behind the U.S. was in 5G and how China really had the comparative advantage. You've had a chance to think about that and to think of ways of correcting that. How does that happen?

ERIC SCHMIDT: Well, as a bit of background, there are small efforts in the United States around 5G, but often hampered by lack of spectrum. And our telecommunications infrastructure does not have the spectrum that it needs, which is in my view a decadal policy failure over the last ten years, whereas China gave 200 megahertz to each of the three Telcos with a build-out requirement and they're busy building it out. There are more than 20 million users of 5G in China. It's been verified as very high speed and their goal is 110 million this year.

So we have a national competitiveness issue around 5G. And again this gets back to why our infrastructure is so important. We have to win at these things. An aside is that this is the first technology, platform technology, where the United States did not develop it and offer it to the world. In fact, Huawei is doing that and we're quite annoyed that China is doing to us what we normally do to them where our platforms dominate, our values. So we need a response. And by far the best response is to get additional bandwidth available for the telos to quickly build out what is called mid-band 5G. We've issued a series of reports about that but we need to move quickly. The current plans involve spectrum clearing which could take between five and ten years, which is way too long. This is really a national emergency and now we understand why it's so important.

CHAIRMAN MARIE-JOSÉE KRAVIS: And is that getting any traction in Washington?

ERIC SCHMIDT: Yes. Everyone agrees this is a problem but no one agrees on the solution. Big surprise. So I think this is a case where the government needs to come to some kind of combined view, and I'm in favor of doing multiple attempts at this. We need to have American firms participating. We need to strengthen the offerings of Nokia Ericsson and Samsung who are the competitors to Huawei. We need to make sure that the supply chain of technology from the chips and software is free of Chinese software

influence for obvious surveillance reasons. And our military, which I work with, desperately needs the tools that 5G has for their IOT work.

So I don't know if you know, but in 5G you have the ability to control latency which means that you can actually precisely decide how fast the connections are. And that means that all the devices that you have, you can have one central device that has all the smarts in it and the other ones can be inexpensive and replicated and they can have very good connectivity. And that's extremely important for our national security missions, but it's also important for our consumer missions as well. I'm worried that somehow China will lead there.

CHAIRMAN MARIE-JOSÉE KRAVIS: So let me bring you maybe a little bit closer to today, even though we should be there on 5G. But one of the tragedies of the current crisis – we talked about distance learning – is that many, you know, we now recognize that many of our communities, whether they be rural communities or poorer communities even in places like New York, in the Bronx or Queens or Brooklyn and so on, that people don't even have Wi-Fi connectivity. And so you send children home to do distance learning, they can't. They either don't have a tablet or they don't have a connection. They don't have Wi-Fi. So in terms of improving connectivity within our own country, do you think the private sector could play a larger role? How do we address that issue? Hardly anyone is talking about it right now but it is a real tragedy.

ERIC SCHMIDT: It's a very big issue for the country for all sorts of reasons. This issue of rural broadband has been around forever. There are a number of reasonably proprietary proposals that I'm aware of that basically do the following. They take a tower that's in a place that has fiber and using that tower they beam to a home in a rural area. And then from the rooftop, that particular device can make a small 5G network that will connect to the other houses. And variants of this idea are in four or five proposals that I've seen, all of which would essentially offer roughly the broadband that we have in cities today to a collection of rural homes. That's the best idea we know. The key idea is you take fiber to the towers in dense areas and then you use these new frequencies in 5G to go, you know, 20, 30 kilometers to some place and there are ways of doing beam forming where you can actually make that happen pretty easily and then you can have a local network. That should be a very high priority as well in our nation's ___ that you outlined.

CHAIRMAN MARIE-JOSÉE KRAVIS: And jumping to the geopolitics of all this, the implications are huge. We talk about the relationship between the U.S. and China which seems not to have improved during this crisis – on the contrary. And I think the prognosis for at least the near term is that that situation is probably going to become even worse.

ERIC SCHMIDT: Well, I have spent my whole life as you have, being a globalist, believing that free trade and open borders and open economics and so forth leads to peace. And we have much, much proof that globalization has benefitted many, many billions of humans in terms of standard of living and so forth. We also see the consequence of globalization in the form of the pandemic. The response is national. And if you look, at the end of the day when people got afraid, they went to a national solution, not a global solution. Borders were shut down, trade stopped, tariffs went up, not down, fingers were pointed back and forth. What's interesting to me is that in the next year, China, by virtue of the brutal lockdown that they went through, is likely to emerge stronger and faster than the democratic west that we love because we're less manufacturing-intensive, we were later to the pandemic, our recovery is likely to be slower, our economic recovery is likely to be slower.

That, I think, has profound implications for the balance of power within the globe. We already have problems where China is using its 5G influence, for example, to influence other countries. People are very scared in the developing world about this disease. It makes perfect sense for China to try to help them, and I hope that they do. But again that's more Chinese influence. It's worth saying – we haven't mentioned this – that while we're having a problem because we're all, we have an economic problem, in the developing world, this crisis is a hunger crisis. The majority of people in many of these countries have to work to eat and when a country gets shut down, they really will not be

able to eat. So we have to solve our own problems through the mechanisms that we're talking about, but we also have to get ready for what's going to happen there. This disease knows no borders.

CHAIRMAN MARIE-JOSÉE KRAVIS: Right. A huge humanitarian crisis is in the works.

ERIC SCHMIDT: Absolutely. And again you wonder, one person I was talking to said that there's evidence that the recovery from pandemic economically is much longer than traditional recoveries. I'm not talking about the United States here. I'm talking about the globe. And that the setback in terms of human capital, human progress, human intercourse – if you will – among all the various players is profoundly anti-growth.

CHAIRMAN MARIE-JOSÉE KRAVIS: Well, it's a shutdown of the real economy so it's not the same as the financial crisis that we lived through in 2008/2009 where at least you have some financial levers. But here, when you shut down the real economy for a long period of time, you're, you know, even companies that come back or small businesses that come back won't come back at full capacity immediately so it's much more stretched out.

ERIC SCHMIDT: And it's worth, I'm trying to understand what the restart looks like. I think that...

CHAIRMAN MARIE-JOSÉE KRAVIS: Well, that was my next question to you. How do you go about reopening?

ERIC SCHMIDT: Well, you need to solve both the health problem and the economic problem at the same time, but we have very few tools to know how to do it. We don't have mathematical models that understand the network paths that people follow. We didn't take the time in the last month or two to collectively figure out what the contact points of everyone were. That's a lost opportunity. So the most likely scenario will be a series of unlocks, right, starting with social distancing in retail, social distancing in restaurants. But it will be a long time before you're going to show up without a mask on in the outside. This will change our society for much longer than we think. It's not going to be a quick recovery back to the hugging and kissing in restaurants and all the kinds of behaviors that were perfectly fine before the pandemic. People will remember.

And until there's a broadly available vaccine and herd immunity, it will be dangerous to engage in some of those activities, especially if you're older. So I'm assuming that in the genius of our country, each state will do this differently, and I don't think that the states have the tools to make these decisions accurately. And so all of us collectively have to work to get those tools funded, built, and help them. Some of these are information problems. If I open on May 15 and I do it on a two-week unlock, what is the probability

of me increasing the rate of infection? The rate of infection is still growing.

CHAIRMAN MARIE-JOSÉE KRAVIS: Yes, but even if I open on May 15, let's say I'm a restaurant and I served 80 meals an evening, I probably will be serving 30 because of the need to social distance and also the reticence of clients to come in, in groups and so on. So when we think of reopening – I know that Tony Fauci often says it's not a light switch – it's much more complicated than that because you'll have capacity issues. Even if you open factories, for example, Spain has opened industrial factories on Monday and has opened construction and so on, but the demand won't be there for increased consumption very quickly. And also the social distancing rules will impose a different manufacturing or even service delivery. So I think that when we think of going back, we're not going back to the status quo ante.

ERIC SCHMIDT: Right. But let me give you an example of a way to think about it. Get a bunch of mathematicians and think of this as a network problem. We have the notion of human super-spreaders. Why don't we have the notion of super-spreader businesses and why don't we model their likelihood of spreading? So I'll give you my favorite example, golf courses. Golf courses are probably pretty good to open because people are outside and there's probably relatively little contact and there are estimates that the indoor versus outdoor spreading difference is about a factor of 19. So you would prefer to open up an outdoor business than an indoor business. You start going through that

and that becomes a fairly straightforward math problem. You would open the things – because we want people to work, we want our economics back but we want to do things in a way that's safe. So let's make that list. Let's build that plan. Let's do it on a state-by-state basis. I think what we're going to discover, by the way, that at the end of the day looking at compound risk, people who are 65 and older are basically going to be encouraged to stay home, that the danger to them is going to still be too great and so forth.

But for working-age people, for things where there's reasonable social distancing, there's reasonable probability of being outdoors and there's reasonable temperature testing and other things, that they're openable. But I'm making this up. I wouldn't want to make that decision if I were a governor without having some facts. I'd want to know what percentage of my workforce is covered by this. How many people am I exposing? What additional danger am I asking? I haven't seen that and I'm not aware of those models. People are trying to build them now.

CHAIRMAN MARIE-JOSÉE KRAVIS: So in a way you're making an argument for our technology companies to become even more involved and that they will become even more needed going forward if we're going to move towards much more information technology, information sharing and so on. And in a way that goes against the mood that seemed to prevail before the crisis where there was finger-pointing about

concentration in the IT sector and so on. How do you see that balance?

ERIC SCHMIDT: Well, I actually don't think the large companies will do this for the reasons that I said earlier. Now, again I'm not speaking for any one of them. One, they're really busy with other problems. But I think that if I were the governor of a state, I would go to the university and all of the people that I know and I'd say I want the 50 smartest technical people in my state – every one of them has a smart university full of smart folks there – and I want you guys to build me a model of how I can reopen my economy with the least risk to health. Right. And I, the governor, right, because I think this is where the governor's decision is, is probably where the decision will be made, I'll make that tradeoff.

And, by the way, when they do that study, I think what they're going to discover is the hardest decision is the decision to open up schools. And the reason is, it's very hard to practice social distancing in public schools and we don't fully understand the transmission path with kids and their parents and especially their grandparents. And I'm not suggesting that I know the answer to this question – and I have a great deal of sympathy for the people who are struggling with this problem – if I were the decision maker, I would say I'm flying blind. How could you possibly expect me to make the right decision, probably the most important decision that I'll make in my political career from the standpoint of serving our nation, and I don't have that information? That's a problem

that I think can be solved at a state level.

CHAIRMAN MARIE-JOSÉE KRAVIS: But the problem is, and Governor Cuomo has mentioned it in New York in his dispute with the mayor of New York, where he said that if you don't open the schools, it's hard to open businesses because it's hard for parents to go back to work if they don't have access to childcare, they don't have help at home and so on. So it's hard for them to go back to work if their children aren't back at school.

ERIC SCHMIDT: So that's a good example of a risk decision that is proper for somebody who is in charge, proper for a military leader or a political leader. How do I evaluate that risk? If I were the governor, I'd say, okay, show me the numbers. Show me how many people will be infected, how many parents will be infected incrementally because of my decision to open the schools in order to allow those parents to go to work. And then I'll use my judgment because we don't have models. We've never been through this as a society to answer this question.

My point here is not that I know the answer again, but that the government is operating – because we got here without any information – they're just making stuff up. They don't know. They have these aggregate models. I want to know precisely the question of what's the incremental danger if I open up a golf course? Let's assume no, it's little. What's the incremental danger when we begin to open up sports activities that involve

people being close together? Probably much higher.

CHAIRMAN MARIE-JOSÉE KRAVIS: So can we do that without – I'm going back I guess full circle – can we do that without having better testing or more widespread testing? I mean we keep talking about these tests where we have responses in 45 minutes, others in 15 minutes, but that's not happening and we're not doing massive testing.

ERIC SCHMIDT: So we don't have to test everyone. Think of it as a polling problem, to answer this question. So imagine New York State and let's say that I had a uniform test where I could see exactly the right distribution. In other words, I saw a certain number of adults, a certain number of kids and so forth. And let's assume that the test is highly accurate. The most recent tests at Stanford are 96% accurate for having the disease so that's pretty good. So let's then take that study of all of the state and then we'll extrapolate to the whole population. That's the only way I can see in the next few weeks that we'll be able to answer this question because we won't have uniform testing. But at the moment, in many states you can't say that every representative group has been tested. There are many groups that have been very poorly served and poorly tested which is one of the reasons why we have outbreaks.

CHAIRMAN MARIE-JOSÉE KRAVIS: Well, it's also the people who have quarantined

and who have been meticulous and vigilant and so on who have not been infected, in fact, we're saying, well, maybe they're at the highest risk once they come out of their quarantine and being so obedient.

ERIC SCHMIDT: But what I'm trying to say is that there's inherent risks in this situation. That's why this is so difficult. We don't know how many asymptomatic carriers there were. We don't know how many people got sick and got better and were never in the testing pool so we don't know how to count them or what have you. We don't know the transmission rate within families, although we have estimates broadly. So we're going to have to make some assumptions.

And when you look at the people who say, there are many people who have written these books about, or papers about how they would open up society and they have a set of pre-existing demands. And those pre-existing demands are sufficient PPE, sufficient testing, a vaccine on its way. They have this long list. That strategy keeps us closed for months, which is neither a politically reasonable solution nor economically viable, and it's not fair to the people who are really suffering. I mean I'm very, very concerned economically – this is The Economic Club – I'm very, very concerned that another month or two will lead to a very significant bankruptcy cycle in many industries. And once the bankruptcy cycle starts, it's very hard to get that capital back in.

CHAIRMAN MARIE-JOSÉE KRAVIS: Yes, I mean we've made tremendous efforts to maintain liquidity but at one point the liquidity problem becomes a solvency problem. And that's exactly what you're referring to and that's, I guess, the greatest fear that our political leaders have and how do you get out of that? And I think that's the biggest concern in this current climate. Just in closing, Eric, because you've done a great deal to try to support vaccine research, and maybe in closing, if you could tell us a little bit more about how you think a vaccine calendar or possibilities appear.

ERIC SCHMIDT: Well, as you know, there are three stages in the vaccine research. The first stage is does it harm the recipient? The second is does it actually produce antibodies? And then the third is does it actually work? So those three stages take a certain amount of time and you can only run so quickly.

There are a number of projects which are trying to actually look at building a vaccine by saying in addition to finding something which will block the receptor – when the virus hits the receptor as everything goes haywire – but they also add compounding chemicals which I don't fully understand which somehow guarantee that it will stay where it's going. And there are, in AI machine learning, there are quite a few techniques that are being applied now to try to do more than the traditional vaccine discovery which is looking for something which will block the protein. And so I'm very, very hopeful about all of that, but it's all research that needs more money.

Let me finish by saying something very important about America. We are late to this party, but if we got our act together with respect to research in these areas and these mechanisms for social distancing that I'm describing, we could ultimately become the leader, because all the other countries have the same problems with respect to resurgence of the virus and so forth and nobody wants to go back to the Chinese model. So there is a possibility that America, if in the next month or so figured this stuff out well, which includes the things that we've discussed, those ideas could become adopted by our democratic partners and friends who are struggling, if not as badly as we are of course.

CHAIRMAN MARIE-JOSÉE KRAVIS: Well, on this hopeful note, I want to thank you, Eric, for sharing your valuable time. I know how busy you are. And this has been very informative, so thank you so much for spending the time with us. And I hope we'll be able to have you in the flesh in the not-too-distant future. Going forward, I have to tell our members that events such as this are going to continue and we've made a number of plans for the future. But just to remind everyone that our next event is on Thursday of this week with John Williams, who is the President and CEO of the Federal Reserve Bank of New York. And he's also Vice Chair of The Economic Club of New York. So please monitor our website and continue to communicate with us by email. We will do the same. Thank you for joining us. Continue being vigilant and prudent, safe, and well.

And hopefully I'll speak to as many of you as possible on Thursday. Thank you. Thank you, Eric.

ERIC SCHMIDT: Thank you very much.