

Design Talks

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One Laptop Per Child: \$100 Computers for the World's Children

Moderator: Alice Rawsthorn

Panel: Yves Béhar

ALICE RAWSTHORN: [Beginning cut out]...grew up in the United States. And after graduating, he joined the design consultancy frog design. He founded his own design consultancy, fuseproject, in San Francisco in 1999, and he's worked on product design there for clients like Nike, Sony, Herman Miller, Birkenstock and Swarovski. He's had solo shows at the San Francisco Museum of Modern Art and also at MUDAC in Lausanne. His work is represented in the world's most important museum design collections. For the past two years, he's been working on a non-profit basis on the XO1 for One Laptop Per Child. So over to Yves, who's going to tell us all about it.

YVES BÉHAR: Thank you, Alice. Thank you everybody for being here. This is an exciting day, actually. This is the very first time that we present the One Laptop Per Child in a design setting in an exhibit in Europe. There's an exhibit a little further on the other side here, which actually shows four of the laptops functioning. So it's kind of a first, and it's fun to do it in my home country, in Switzerland. And I will sort of walk you through both the process that got us to the One Laptop Per Child and then tell the story of the One Laptop Per Child, which I will show. But first of all, I have this image here because, you know, it is very easy to be involved in technology and the future, as I am, and just work on predictions and just speak of the future in an abstract type of way. It is very mesmerizing to be at a 40,000 ft view, as I filmed this recently, and work in the abstract. But as designers, I am very involved in working on things which are near-future, are about five years ahead. We have to dream, we have to use our ability to predict the

near future. At the same time, we have to apply this very quickly and slightly in advance of the expectations that are out there.

If we look five years ahead the predictions aren't great. The predictions are actually very dire. We will continue to experience the heat as we do today, and global warming. There will be more extinct species around the world. So there is a lot of pessimism looking ahead. The media loves it, too. There is power in pessimism and there is power in these dire predictions. But the nature of our work, the nature of the designers' work, is optimistic. It's one of looking ahead, it's one of looking around corners. And to see what is possible, to do what people think is impossible today and make it realized in the near future. So, when I was a kid in Switzerland, there was a cartoon called the Barbapapas and most of you have seen it, but when I give this presentation in the U.S., nobody knows what I'm talking about. But this is a very optimistic view of transforming a family that essentially changes forms, changes shapes, adapts, solves problems, and has a great time while doing it. And in a way, I'll always go back to this cartoon because to me, that was the best design, the best sort of thinking of what we can do and of the possibilities of design and our human involvement.

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So, there's two areas that are critical in our work at fuseproject. One is *emotion* and developing works that are really based on experimentation around human behavior. Looking at the idiosyncracies of human behavior. And finding technologies, finding aspects of that behavior, that can be resolved, in a way, by design, can be spiritually lifting through the merging of design and technology. And the other element is this notion that design has a *democratizing effect*. That design is something that goes beyond the world of luxury and that goes beyond the idea of something that only works for the developing world or for a very small minority. So those two aspects are critical.

I'm going to go very quickly through the 'Emote' one, even though I know everybody just wants me to talk about the One Laptop Per Child, because I do think it explains the role that design can play. When I think of design and when I think of the experimental work that we do, I always think about how it is about humanizing. About how we take technology and materials, in this case crystal, a very hard material, a material that is typically static, and how we humanize it by giving the user the opportunity to change the shape of this object, and to draw it themselves and for the entire piece to transform in front of them. So this is a humanizing use of technology and the effect is quite mesmerizing. I've been doing these projects, not as limited editions, but as personal experiments. In this case, I experimented with LEDs and the ability of LEDs to change, for light to transform and to eventually become a much more emotional type of experience. This is one of the early projects. So, this led me to a project called Leaf, which is actually launching in two weeks in Europe, which is a light which is the first light that allows the user to change from a cold, efficient work-style light to a mood-enhancing, warm type of light. Again these are all about technology which is humanizing and then, you know, I can explain a lot about how we do it, and how we make it magical and how much tech and how much research and how much software development goes in it. But the result is that you have a product that you can just touch. You make it warm, you make it bright, you make it cool. You can touch the lightbulb, as well.

So some of these principles, why do they become important? I mean why are they important criteria in this project, the One Laptop Per Child? In fact, a journalist came to me about six months ago, a Swiss journalist, and asked me this question which is, "Why is design important on a product which will go, eventually, to kids in the developing world? Isn't design just a bit of luxury, isn't it just a surface element, something that is an add-on to a product?" This question was really disturbing to me. First, because it

assumed that design *is* about luxury, and it *is* about surface, and it *is* about decoration, or superficiality. And two, because it assumes that these are things that are not important to children everywhere, or to people everywhere. I mean, what we have to realize is that the designer's work is really done for about 1/6 of people on the planet. There's only one billion people that really have access to design, or in this case, access to technology or to information. So as designers, we've developed these tools, we've become creative. We can integrate new technologies and new experiences, and I think part of our duty, part of our responsibility, is to bring some of that knowledge in places where it is yet to be discovered and it is yet to have an effect.

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[Here is where] the One Laptop Per Child [comes in]. So, I'll tell you a little bit of a history and context. There's a man called Nicholas Negroponte, who is one of the most important thinkers of our times when it comes to advanced technologies and research. He founded the MIT Media Lab about 20 years ago or so, and he has been a pioneer in many different developments of technologies and products and new enterprises. He has been involved in giving away computers to children in Cambodia, in schools in Cambodia, for the last fifteen years. And those would be second-hand laptops. Your typical IBM or HP laptop, which would be donated to these schools, and the schools would then have access to manuals, to books, connections through the web. And what he saw was the amazing result, the amazing change, that this experience had on the kids, their parents and their communities.

But the problem was the machines themselves. The machines, laptops, are really not designed in any way that is creative. 98% of what goes into the making of one of these products is really legacy. It's what was already there. We just inject 2% of colors and finishes and it becomes the experience we have. So the idea was to design an experience

that is specifically for the children. And for the children who live in tough conditions in the developing world.

After this start about four years ago, he eventually came to us and he presented this project to me and he said, “You know there’s a lot of people out there who don’t believe in it. There’s a lot of people who tell us it’s impossible to do and it’s impossible to do for a low price.” And I was like, “Okay, well that sounds great, but what is your plan?” Basically his approach is that there are three elements that are critical in this project. One is technology, two is education and the third one, he said, is design. And that was quite an extraordinary statement for somebody who spent their life as a scientist and an educator. So I wrote down five ideas in that first conversation, and five things that I felt were really a breakthrough with the One Laptop Per Child. Plant an idea. You put an idea out in the world and that idea grows, becomes something that suddenly is accepted. When the OLPC was first talked about, everybody made fun of it. As I said before, it was impossible and it was not something that we could realize. Seed learning, which is about starting learning, and letting kids, letting people learn on their own and develop their own experiences of learning. Grow a mind. That’s obvious. Mind the world. And share. And I’ll explain these a little further.

One of the key characteristics of the One Laptop Per Child is the ability for sharing. The two little antennas that pop up right here are Wi-Fi antennas that have half a mile radius, 750m radius of connectivity, which means that when the kids receive this laptop, they go home with them in the evening, they open them up, and they can immediately start talking to each other. They can connect through these antennas, and by creating what is called a mesh network, which is each child connecting to each other, they can actually cover very large geographical areas in connecting. So what do they do when they connect?

They can draw together, they can text each other, they can review information together. The idea is for children to do projects together and to have this type of participation.

The other element as a designer here, beyond the technology I'm describing, is that the effort of integration was actually tremendous and about two years of work. Every part, in order to get to a low cost, had to have two or three or four different types of functions. For example, the antennas are also the protective covers for the connectors, the USBs and the microphone connectors which need to be covered from dust and dirt. The same antennas are also part of the bumper. The green area protects the inner parts of the laptop. They are also the latch by which the laptops are closed. So behind an aesthetic which is very compact and I think very robust looking, without anything sticking out, there is really the idea of integration in a completely unique way. [Shows something to audience] This is a detail of the antennas and latches there.

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Another important element is the way kids interface with a laptop. This is not really just a laptop project. It's a way for all kinds of different types of interfaces to happen. For example, we have game controllers in the corners. The laptop can be used in e-book mode to read a book. The actual image on the screen can be rotated to any direction, giving all kinds of different choices for reading. Another technology that was integrated is the track pad. This track pad here is the same width as the screen, allowing the children to write cursive letters, to learn how to spell traditionally, with a pen on the laptop itself. Obviously it's also used for drawing, as well. And then the keyboard, we *do* have a keyboard, is made out of one singular material, rubber material, so there is no possibility for dust and dirt to go in. It's easily silk-screenable to different languages, to different cultures. It is one part and it takes only one pass to modify the laptop for Thailand or Nigeria, for example.

[We designed] this laptop so that from six feet away you know immediately what it is. You know it's for children and kids recognize it. There's a real purpose to the way it looks from far away. The idea, though, is also to give an experience close in. I am able to show here that there is only one part that is textured on this unit and the ones in the back. The entire laptop is going to be covered with this goose-bump texture, and this is a texture that actually protects from scratches and damage on the laptop. It's also a texture that has a great tactile feel. Again, being very, very sophisticated with the experience that a kid should have. A visual one from afar, and a very tactile and personal one from close in. And then if you look even closer, we even inserted the XO's little icon and logo which is visible here, in the texture itself. So going almost microscopic with it.

The laptop has been in testing for about three months with children in three different countries. And we've gotten a lot of great feedback actually from that use. Feedback which I can describe later, about the teachers and how they feel it's an amazing tool but also feedback from things that didn't work or things that *don't* work. The beauty of this project, and one unique part of this project, it's an open source project. Most of the things we work on as designers are top secret until the product launches, until the product is on the market. In this case, we can talk about all the mistakes, and all the challenges and all the successes that we have on an ongoing basis. One of the challenges was that the kids would receive this laptop, and there would be 100 in a classroom, and they wouldn't know which one is whose. There's no way to tell. We explored, actually, multiple colors but we weren't getting enough variety. So we invented the new process, and the factory went crazy when we first told them about it, but we had to make it work, which is to manufacture the X and the O's in 20 different colors and the combination of the X and the O in 20 different colors. 20 times 20. That's 400 different variations. So now these are produced at the factory with a mechanically inserted O and X in 20 different colors each,

which means that when they get on a palette, they get shipped to Nigeria, let's say. The kids receive them and immediately they don't have to pick and distribute them. They get this diversity and then they are able to know which one is theirs. Mine is the violet and the yellow one.

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An important element is the power consumption. It is key to have low power consumption on this object. As you can imagine, a lot of these schools and a lot of the homes either don't have regular power or don't have power at all. So we are working on many different ways to generate power which charges the batteries of the laptops, including solar captors, including captors that are based on car batteries in the developing world. A lot of car batteries are used as the main source of power within a school or within an environment. And we also have designed, with an engineering firm based in Berkeley, this human power device. It's called a yo-yo, human power. There's a little handle that comes out on this side, and simply by holding to one side and pulling the handle, we generate power for the laptops. What is key here is that this is a completely new device and it generates an incredible amount of power. One can also put it around their feet, like this [demonstrates]. My feet are bigger than the kids' feet but it still works. And the kids are able to pull like this.

But what's key here is that it generates a lot of power but what's even more impressive is the little amount of power the laptop consumes. It consumes between two and seven watts of power. If you look at an HP or an Apple laptop, these consume between 35 and 40 watts of power. So the ability to reduce the power consumption and combining this with a human power device, which is very powerful, we are able to charge the laptop by hand. But one minute of pulling on this gets you about ten minutes of power on the laptop.

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We had some lights, some nightlights, but actually we removed them. And this is my version of the Barbapapas [shows to audience]. It was a color study and we never went with these colors but we created this fun animation of what the laptops are. As I said earlier, currently we are in testing and there are three countries that have these laptops in different schools. I have some pictures of these schools back there. We're using these tests as ways to refine and continue to develop towards production this fall. So we're scheduled to make between 5 and 7 million XO OLPCs by the end of the year. That's it. That's my story.

[Applause]

AR: Well it is a fantastic story and beautifully told. I'm going to ask Yves a couple of questions now and then you will all have the opportunity to ask him questions, too. So first of all, can we talk about the price of this laptop? Because this has been one of the most contentious issues. Nicholas Negroponte said from the start that he wanted to develop a \$100 laptop. Is that still the long-term goal and if so, where are you in the road towards that?

YB: Well currently, it's 100 Euros. Or just a little more than a 100 Euros. That's actually a joke. But it is true. It is 100 Euros. This is, again, the cost of production. There are no profits that are added to this amount. But the first few million units are going to be around \$175 and the reason is that we wanted all the features to be of a high degree of performance. We didn't want the experience to be less than what it could be. Initially, the first 5 to 7 million are going to be about \$175 and then after this, the price should be dropping to \$100. Nicholas has even mentioned the fact that within a couple of years, if

the quantities are there, we could make them for about \$50. So the goal is to drive the price down with quantity.

AR: And there's been a lot of publicity recently, a lot of media coverage, about Dell's laptop that it has developed for kids in the developing world which will cost, I think, just under \$400. But Dell claims it has more power, more features than this. Because there has been so much controversy about it, can you explain the situation, how the Dell laptop differs from this and what the implications are for the XO1?

YB: As I said earlier, when you plant a seed, you get a whole lot of other seeds that sprout out of the first program. So it is very interesting to see all the people that initially said this wasn't possible, this wasn't makeable, come in and make one themselves. Now, I don't think, per se, having other people come in and try to solve the same problem we're solving is a bad thing at all. The main difference, though, is that it is, in their case, a little bit like competing with the Red Cross. Why would you compete with the Red Cross? This is a non-profit. We're just trying to put it out there. So I think initially there is some controversy because you're seeing these big, large corporations competing in a price category, at a price point and a product range, which really has no profit in it. There's really no money to be made with low-cost computers. The only people that make money in computers are high-end, what we call premium computers. Over \$1200. Below that, nobody makes money. It's just about market share. So what is the reason to enter so aggressively into a place where there's really very little money? I think the difference is we're trying to do something for the world and some other people are trying to *own* the world. That said, without being too polemic, I think eventually, as it typically happens with these kind of projects, it will end up being more of a collaboration rather than a competition.

AR: But couldn't you argue that actually it's not who manufactures the laptop, whether it's One Laptop Per Child, Dell or whoever, that's important. It's actually getting a decent laptop to the kids who need it most that's important. So if all One Laptop Per Child ever achieved was forcing multinationals like Dell to make cost competitive computers for the developing world, actually that's good.

YB: Absolutely. It's an open invitation for anybody to go into a place that will make a huge difference. If you look at the problem, and I try to state the problem and explain things a little bit on the table design that we have back there, there's two billion children that are in the developing world and most of them, about 90% of them, are not educated to the full extent. This is a very big challenge, a very big problem. And it's about time technology companies, designers, countries, would start to solve it.

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AR: One of the most important elements of any product, particularly products for the developing world, is their long-term life expectancy and what happens to them after their active life is over. Surely the worst case scenario for the XO1, is that in a couple of years time, you'll find broken laptops all over the developing world. What are you doing to try and mitigate that and what's the environmental strategy for the project?

YB: These are all very, very good questions which I am very passionate about, as well. I think sustainability in design is critical, and longevity of a project like this is critical. We have a few different methodologies. First of all, the laptop can be completely opened, upgraded, and repaired because of the simplicity of its construction. You don't see any screws on there. We actually kept it very clean but by removing the battery, which I'm not going to do now, you access two screws which allow you to break apart the entire laptop bit by bit. There is a whole plan for parts to be available and built replacement

parts to happen. The other element here is that from a disassembly standpoint, every part in the laptop can be recycled. And we're matching the most stringent European environmental regulations with the OLPC, and that is something that most computers don't. We have both a strategy for part replacement and longevity of the product, as well as the ability to recycle the entire laptop.

One more thing, we actually have worked very, very hard in drop tests, to make it resistant and robust to start with. And one of the tests that we have accomplished with this design, is you can actually drop it, I'm not going to do this here, from a meter and a half high, which is about the height of the kids, the older kids that would be using it. You can drop it on any corner, including a corner with the antennas opened, and it won't break. So our drop test standards are actually three times as high as standard laptops. Standard laptop is about 60cm drop test, we're at one meter 50. So as much as we can, as much as mechanical and gravity allows you, we're moving towards a very robust and durable machine.

AR: On a very pedantic point, what about repairs? Is One Laptop Per Child going to offer some sort of maintenance service in all the countries that it's going to be distributed to?

YB: Maintenance is local. Everything we are doing in the developing world has to be with local people being able to very easily do repairs, exchange parts, fix a computer themselves. And those are not that difficult, they are not that hard. And from the experience of what we have seen, there is actually a whole industry of repair, reuse and a lot more developed in those countries than it is here. We tend to throw things away a lot faster than people do in the developing world.

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AR: And obviously, you were involved with the hardware design and your other collaborators concentrated on different areas of the project like the software and the user interface design and you've talked already about how dual functionality of each part contributed to reducing the cost to make it price effective. Can you explain, as briefly as possible, what are the key elements that have enabled you to have \$100 as a realistic target price for this, in terms of reducing the cost?

YB: First of all, is the fact that we don't have a harddrive. We use flash memory. One of the key decisions we made early on...the typical laptop has the main board and the connectors. Everything is in the base, in the sort of lower part, underneath the keyboard. In this case, we have put the board and the screen and all the components in the top area, in the screen area. So we have reduced the complexity of assembly tremendously by doing that. All we have is a very small link between the keyboard and the upper portion. This reduced complexity has allowed us to do two things. One is to use a much smaller battery, a lot less power and that reduces the cost tremendously, and a completely different type of screen. Obviously a smaller screen. The screen is always the most expensive part of any product. The screen costs about \$40 just by itself. But it is a screen that consumes a lot less energy, and it's been refined actually by Chi Lin in China, which is the largest LCD manufacturer in the world.

It's also very innovative. I think I forgot to mention this. This is the first screen that has a mode that allows you to read text, a book, let's say, outdoors in plain sunlight, in bright sunlight. This is certainly an innovation I would like on an Apple or a Toshiba and it is one that is here. The other element is the sheer quantity. By making several million units, by using components in the millions, we're able to lower the cost. Now you also have to

think, there's no marketing, there's no upcharge, there's no distribution. All of these costs really add up. If this was a real product on the market, I would imagine it would be three or four times more from a value standpoint. But since we're a non-profit, we've taken all that out of the project.

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AR: How is the design going to evolve from here? You mentioned that it's an open source project in terms of its development. Is it going to be a continuing work-in-progress that you're going to constantly tinker with and update to improve?

YB: Yes. Absolutely. I mean this is just the first version. It's the first product that we are putting out. We have plans to make others. But we are also working on the entire ecosystem around the laptop. We are working on repeater antennas for villages, we are working on school servers, which are also going to be very low cost, about \$100 a school server. And these are most robust things you have ever seen. I mean, you can drive a truck over these things, and they are going to survive. We're working on solar charging devices. We're working on gang chargers, which is when kids can charge 20 batteries at a time. There's a whole host of projects that are being worked on because this project is going to need other infrastructure, other types of products around it. But this is the first step. Nicholas is already wanting to think about the next version.

AR: Does anyone have any questions? If you do, could you raise your hand and Wava will come round with the mic. One over there.

AUDIENCE: Hello. Since open source is going to be a key issue in the future, and the third world might actually leapfrog the processes that we've been going through.. the coordination of open source in third world, amongst different groups... Are you involved

with the FLOSS Group? F-L-O-S-S. I know that there are other groups including Fulco Cosmut [?] who's working in Brasil, who is working with the Ministry of Culture there, so that telephones and computers will be synchronized. There are groups in Africa, that actually over mobile phone, non-literate people can call up and get an answer from the Wikipedia search that's then converted into voicemail. How coordinated is that?

YB: The MIT is really a center of collaborative, of technological collaborative places. There are literally hundreds of open source partners on this project. I don't know all of them. I'm not really coordinating any of the software portion of it. But there's a large number of both software conversion that allow the laptop to work with many different types of data and many different types of information, so I'm not sure about the specifics about what you're talking about, but there are huge collaborations that happen at a country level and with the United Nations, as well, in order to make this happen. I mean, they are working with the Agacan Foundation [?], they are working with the United Nations, they are working with a very large number of different organizations on this.

AUDIENCE: The user interface is still a kind of mouselike device, so to speak.

YB: It is, but the whole software actually is organized as a metaphor of the world. There is no grabbing a file and dropping it in a folder. It's not anymore about creating folders. It's really about zooming into the world and zooming out of the world as well as knowing where you are relative to the world. So I can demonstrate it later. There's just a slider on the laptop that allows you to jump straight from the application to the desktop, then to a screen that shows you your position relative to other childrens' positions in the region where you are. So who you are doing projects with, who you are drawing with, etc. As well as a last bit which is sort of you in the world, which shows the projects and the

connections you have with kids in other places, other countries. If you think about each program and each level of information, it's always about the new desktop, the new style here, the new software approach. It's always about zooming in and zooming out. And it's a very simple metaphor. You just slide your finger on one of these keys. Everything on the keyboard is a bit different and it allows you to go deep into what you are doing or go out and collaborate.

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AUDIENCE: My question is, the product is the one thing, but who takes the responsibility for the content? You are going into all these countries. The sense of education.

YB: Sure, these countries own the laptops. I really want to reiterate that. It's the countries themselves who buy the laptops by the hundreds of thousands, by the millions, who then distribute them to every child in a classroom. So there's certain rules that we have about the project as far as every child getting one. Very important. The children owning the laptops.. They don't belong to the school, they belong to the kids, they take them home. As far as the content, the content is in two ways. Part of the content, scholarly content, is owned by the countries, which are able to distribute textbooks, which are able to distribute lessons and courses directly to the laptop. And the other part of the content is the internet. Of course with child protection, adult content child protection, which is some of the most advanced on this machine. The ability to go and research projects. For example, here I just loaded the World Literary Library, book library. So this is a library you can go to and you can download any book in any language and read. So the content is going to be really about the countries. It's not trying to take away the content of the education from the teachers or the countries. It's really about them.

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AUDIENCE: [in French]

YB: This is my father asking a very good question. It's a very good question. The question is can these laptops, which are originally made for the developing world, could we imagine them in our world, our developed world? The answer is absolutely yes. At the same time, it is critical that in its first phase, the project go to who it was intended and who needs them the most. That said, as a second phase, year two or year three, we are looking at collaborating with cities and regions and these laptops being available to different types of people whether it's older folks or young kids. The other thing that's interesting is that for once, there is something that the developing world is going to have first, and that us, in the developed world, we are going to want too. So I think that's a good place. That's why I'm very happy that we are starting with the countries where it is going to.

AUDIENCE: Instead that you try to translate my French, I prefer to try in English. Really I should say you surprise me because going around this exhibition of design, I knew that you were going to do a conference. But you surprise me in two ways. I will say why. Tell us, Mr. Behar, you seem to be so engaged as a citizen, as a designer of course. You position yourself and your project at the opposite of other designers here. Are you still looking for accessibility to all and universality in what you design?

YB: That's another very good question. I think it was important to bring the One Laptop Per Child here as a counterpoint. I think design is very diverse. It offers ways to think about the laboratory, it stretches the boundaries of both technology, materials, usage. It integrates with our present and future lifestyle. Experimental design has a very big role to

play and is very important, both culturally and personally for me. At the same time, I think, partially because of the media, we have really shifted the notion of design towards one of luxury, towards one of limited editions, towards one of a collector's world. And I think as designers, and I know I'm not the only one in my profession saying this, it is very important that the counterpoint be shown and that we also realize that we cannot just advance our *own* culture and our own knowledge, but we can also contribute tremendously with our skills. With our creative skills and with our beliefs we can advance other causes, any causes really, whether it is knowledge and education or whether it is linked to other world problems, such as sustainability, global warming, AIDS, etc. I think we have a very important role to play in that and I think part of the reason why we are not doing that enough is because, not just the fact that we haven't been pushing for it, but the fact that we haven't shown how it can be done. The role of the designer is to show the way, not just to wait for the United Nations to say, "Wow if architects were involved in temporary shelters or in emergency shelters or these kinds of conditions, they could actually do it better probably than what we have to offer." We can't just wait, we have to show the way, engage ourselves into projects which maybe take time and effort, and then I think we will place our profession as one of the keystones of affecting change which I think is the role of design to start with.

AR: Well, it's very hard to think of a more uplifting or eclectic note to end on than that. There is going to be a legacy of Yves' talk here today, and also One Laptop Per Child's participation in Design Miami/ Basel because half a dozen of the laptops are going to be customized by different artists and they'll be auctioned at the Design Miami/ Design Fair in Florida in December. And the proceeds will go towards buying XO1s for kids in the developing world. So I'd like to say a very big thank you to Yves for talking to us about the One Laptop Per Child project.

YB: Thank you.

WAVA CARPENTER: I just wanted to thank Alice, as well, for moderating. It was a great talk. Thank you very much. And also, HSBC Private Bank has some questionnaire cards. They are giving a donation to the project for every card they receive. There are some over there if you'd like to help the project.