THE BROOKINGS INSTITUTION

MOBILE TECHNOLOGY:

A CHANGE AGENT IN THE UNITED STATES AND ACROSS THE GLOBE

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Welcome:

DARRELL WEST
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The Brookings Institution

THE INTERSECTION OF ECONOMIC DEVELOPMENT AND MOBILE TECHNOLOGY:

Moderator:

DARRELL WEST
Vice President and Director, Governance Studies
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Panelists:

SHAWN COVELL
Vice President, Government Affairs
Qualcomm

SONAL SHAH
Senior Fellow
The Case Foundation

LAURENCE CHANDY
Fellow
The Brookings Institution

MOBILE TECHNOLOGY & ITS IMPACT ON POLITICS, ELECTIONS & PARTICIPATORY DEMOCRACY IN THE U.S. AND AROUND THE WORLD:

Moderator:

JULIANA GRUENWALD
Freelance Technology Journalist

Panelists:

CHRIS SPENCE
Chief Technology Officer
National Democratic Institute

KATIE HARBATH
Associate Manager, Policy
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REBECCA ROSEN
Associate Editor, Technology
The Atlantic

THE UNIVERSAL IMPACT OF MOBILE TECHNOLOGY:

Moderator:

HOWARD BUSKIRK
Associate Managing Editor
Communications Daily

Panelists:

TOM CARROLL
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America's Future

TOSHI NAKAMURA
Co-Founder and Chief Executive Officer
Kopernik

ERIC TYLER
Analyst
New America

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P R O C E E D I N G S

MR. WEST: Good morning. I'm Darrell West, Vice President of Governance Studies and Director of our Center for Technology Innovation at the Brookings Institution. And I'd like to welcome you to our Mobile Economy Summit.

This event looks at mobile technology as a change agent across the world. It builds on several past forums that we have held this year and examines how the rapid expansion of mobile technology around the world is transforming economic opportunity for millions of people.

We are webcasting this event live. So, I'd like to welcome our viewers from around the country and around the world. We will be live-Tweeting the event as well. We've set up a Twitter hashtag at #TechCTI. That's TechCTI. So, any of you who wish to pose comments or ask questions can feel free to do so. And during the Q and A segment we'll try and take questions both from our live as well as our virtual audience.

Mobile technology has revolutionized the means by which we communicate with one another. It has dramatically altered areas such as finance, entrepreneurship, education, healthcare and politics. We have put out several papers showing the changes taking place around the world. Those papers are free and available online at Brookings.edu. And those of you who are here in our auditorium, there also are copies out on the table outside the auditorium.

Today we have a half day conference that looks at several aspects of mobile technology. Our 9:00 panel will analyze the intersection of economic development and mobile technology. Our 10:00 a.m. panel will explore the impact of mobile on politics, elections and democracy around the world. The 11:00 session will look at the universal impact of mobile technology on several different policy areas.

And I'd like to thank Qualcomm for its generous support of this summit as

well as the broader mobile economy project that we have been undertaking. This is part of a three year effort on our part. Brookings has set up a website on the mobile economy project at Brookings.edu. So, if you're interested either in the past papers we've done, you can check it out online. We have transcripts of the past events and some video from the past events that we've done on that website as well.

For our opening session, we have an outstanding set of speakers who will focus on economic development. Shawn Covell just flew in from London to join us. So, thank you very much for that. She is the Vice President of Government Affairs for Qualcomm Incorporated. She manages global operations and strategic planning for the Government Affairs team. Previously she was based in Hong Kong and served as Senior Director for the company's Southeast Asia unit. In that role she worked with Ministries of Communication and independent regulators on national frequency allocation plans, 3G regulation and 3G licensing among other types of issues. Prior to joining Qualcomm, she was a Manager of Congressional Affairs at the Cellular Telecommunications and Internet Association, better known as CTIA, the largest US Wireless Industry Association.

Sonal Shah is a Senior Fellow at the Case Foundation and a Fellow at the Institute of Politics at Harvard University. In her position with the Case Foundation she works closely with Foundation CEO Jean Case and is overseeing a study and a cross-sector advisory group on impact investing. Prior to that, she served as Deputy Assistant to the President and Director of the first White House Office of Social Innovation and Civic Participation. There she focused on investing in and scaling innovative models, leveraging technology and opening up information surrounding the social sector. She also has worked at Google where she led the company's global development initiatives on philanthropy.

Laurence Chandy is a Fellow in the Global Economy and Development Program here at Brookings. His research focuses on global poverty, fragile states and

the effectiveness of foreign aid programs. Laurence has worked in a variety of developing countries as a consultant and advisor. From 2005-2007 he served as a senior economist in the Department of National Planning in Papua New Guinea where he contributed to efforts to strengthen the government's public investment management program. Prior to that he served as a consultant at Adam Smith International where he led the delivery of donor and government funded projects in the developing world.

So, I'm going to start with Shawn. You work with many governments and organizations to implement programs that create opportunities for those living in poverty. How is mobile affecting economic development around the world?

MS. COVELL: Thank you, Darrell. I appreciate the kind introduction. And thank you all for being here today.

Qualcomm, we're passionate about creating inventive wireless technologies and solutions. And we're passionate about it because fundamentally we believe that wireless has the power to positively impact peoples' lives. There are over six billion mobile connections now in the world which really makes mobile the largest technology platform in the history of humankind.

Now, a lot of people talk about mobile being an enabler and it is that. But I think it's a lot more. It's really a multiplier and at its heart it’s a game changer. As Darrell mentioned I just got back from London. I had the opportunity to attend something called the Mobile for Good Summit and that really brought home to me how wireless is bringing together NGOs, governments, the private sector, educators. And how mobile is really a horizontal technology cutting across all of these verticals. I mean, whether it's education, entrepreneurship, healthcare, the environment. You name a sector and mobile really is not just enabling it, it's transforming it.

And there's a couple of areas that I'm particularly passionate about. One is the ability of mobile to create entrepreneurs and especially to empower women around

the world. The GSMA recently did a study where they found that over 41 percent of female entrepreneurs in developing countries were able to increase their incomes by using their mobile devices. And this is significant because there's another IMF report that tells us that by 2014, 50 percent of global GDP will be coming from these developing countries where these female entrepreneurs are.

And a little bit later in the panel, I'll get into more detail about a project that Qualcomm has with the Grameen Foundation where we're seeing the very positive evidence of putting mobile technology into the hands of entrepreneurs and particularly female entrepreneurs.

Another area where I think mobile has just been a game changer and will continue to be is healthcare. You have countries from the United States to China that are dealing with two very significant healthcare issues. One, aging populations and two, the rise of chronic diseases and these two issues are already having a negative economic impact on countries' GDPs. But if countries aren't able to effectively address these issues, it's just going to get worse for them.

And we can take China as an example of this. There's a Chinese Research Institution that has noted that from 2005-2015 China stands to lose $558 billion in national income due to heart disease, stroke and diabetes alone. Chronic diseases have now -- cardiovascular diseases have become one of the leading causes of death in China accounting for nearly three million deaths annually.

In addition, there's also a World Bank study that shows that if China could just reduce the mortality rates from cardiovascular diseases by one percent, that would result in a net economic positive impact of 68 percent of China's 2010 actual GDP over the next 30 years. And what does that equate to? That equates to $10.7 trillion.

So, you can see the severity of this issue on economic development. And that's where I think, you know, mobile's really going to play a huge role because the

other issue these countries are dealing with is there are simply not enough doctors to reach these patients. In China, for example, 80 percent of the doctors are in the urban areas. They're not accessible to the rural patients. You're hearing more about front line healthcare workers. And you put a mobile device in the hands of a front line healthcare worker, well now they're able to monitor patients' diseases. They're able to train patients to monitor their own diseases. They can take that information, transmit it back over the 3G networks where doctors sitting in the hospitals in the cities can now monitor patients, advise them, diagnose them.

And so, the mobile device is allowing the doctors to exponentially increase the amount of patients that they can take care of, thus reducing the death rates and the negative economic impact. So, those are a few of the issues that I'm excited to talk to you all about. And thank you again.

MR. WEST: Okay. Thank you very much. Sonal, you've worked in a variety of capacities with different organization on ways to achieve impact on economic development. So, what role do you see technology playing in this and what are the things that are having the greatest impact?

MS. SHAH: Thank you and I think Shawn did a nice job of kind of setting up the mobile piece of this. And I think what I would -- what's been interesting about what technology has been doing and I think in many ways what mobile is doing, is it's breaking down big institutions into figuring out how small things can work.

So, in many ways we've tried to fix the large institutional structures and what is needed is almost a cross-cutting issue which is how do we help communities solve their problems. What do they need in solving that problem? And necessarily fixing the big institution hasn't been the only way to do it. There's lots of ways of thinking about it.

So, I'm going to give a couple of examples and mobile is one of those

ways in which it's cutting across institutional structures whether it's through money, or whether it's through healthcare, or whether it's through education and water, there's lot of problems. But I would start with, I think, the problem is what's the information that people are looking for especially in poor communities?

And we tend to start with what's the solution that we need to provide them versus what's the information that they need. And I'd like to give a couple of examples. So, water is a great example and I'll give you one in India. In Southern India, they were finding that a lot of families and a lot of women especially were waiting around to figure out when the water spigots going to be turned on. So, when's the water coming? Is it coming at 6:00 a.m.? Is it coming at 8:00 a.m.? It is coming at 10:00 a.m.?

Lots of people just wait around until they can get the water because it's important to fill up the water containers that they have. And the people in government didn't actually know when exactly it was going to turn on. But a young woman who actually went to India to work on a project to help provide clean water found out that the first problem to solve wasn't the clean water problem. The first problem to solve was just the water problem. And she worked with the government workers to figure out when it was that the spigots were going to be opened on a regular basis so they would at least have an hour earlier before the spigots opened, they knew what was going to happen.

She created an application that allowed families to get access on their mobile phones as to when the water was going to turn on so they could be near their homes at that time. But they didn't have to wait around for it. Now, this is a pay for application. So, families are paying for this service that tells them when the water is turning on. It's not a water solution. It's not a mobile solution. It happens to be an information problem that mobile is the solution for and this company, I think, will eventually become for profit in the next year or so as more subscribers come online and as they start to get more information from the government on a regular basis.

But I'd start with saying, one, it was an information problem. First figuring out what information government has that can be provided. And then two, it was an application problem which is how do you get that information to those communities on a more regular basis so they can actually do something about it.

The second example, which is a smaller healthcare example, is one is South Africa which has now been brought to the US. And here it's called text4baby but in South Africa they were using a texting service on HIV AIDS. So, when somebody needs to get their medication, when they needed to be eating, they used texting to let people know when they should be doing this at every time of the day. Because what they found first, what the problem was is people didn't know what they should be doing.

And then they figured out that texting was -- because everybody has a mobile phone, texting was a way to actually think about getting that information to them. And by getting that they were able to improve the efficacy of the use of the AIDS medication. Because if you don't take it on a regular basis the cocktail changes.

Similarly, that same technology has been brought to the United States. Two years they launched a program here called text4baby. Low income communities and especially low income mothers in the United States, 90 percent of them use mobile technology. Very small percentage actually use a computer.

Now, if you're trying to get to these communities, then mobile is probably the place to think about it. But thinking about what they needed, low income families have low birth rate babies. So, can you get information as to what a mother needs to do on a regular basis during pregnancy? Johnson & Johnson in partnership with a couple of non-profits and the government has worked out a program that allows people to text in, text4baby and text4bebe in Spanish. And mothers during their pregnancy, during their nine month pregnancy will get information on their mobile phone every day as to what they should be doing as this stage in their pregnancy.

It's not a medical solution. It's just information that they can then use and then they still need to go to the doctor. There's still lots of things but they help in addressing that and there's a research study going on as a part of that to see what the effect of that is over the next five years.

But what's important here, I think, is what's the problem and then what's the solution and what's the technology that can help with that? I think sometimes in development we try to solve the technology problem first and then we figure out that it wasn't the problem that we were solving for. It's an information problem that needs a technology not a technology problem that needs information.

MR. WEST: Thank you. Laurence, you study the role of mobile technology in spurring financial inclusion in global development. So, how is mobile money affecting the financial revolution around the world?

MR. CHANDY: Well, let me start by saying that I'm a big enthusiast for mobile money. And I hope that in my short remarks I can convince some of you as well.

For the uninitiated, mobile money allows anyone with a mobile phone to store money, to transfer money, and to receive money without requiring a bank account with a formal institution. And the mechanics of that are fairly simple. Rather than going to an ATM to deposit money or to withdraw it, you go to a designated agent. Those agents in the most successful offerings are really ubiquitous. And they are mobile themselves.

So, they may be the people who stand on the corner of the crossroads selling air time, dry cleaners, petrol station, supermarkets, you name it. And the process of actually transferring the money from one account to another goes through a simple text message.

The pioneer in providing this service really is Safaricom, the Kenyan mobile phone operator who developed this product called M-Pesa which was launched in

2007. And just achieved tremendous, really unprecedented success, within three years they'd captured 50 percent of adults in Kenya were using their service. And in a country where two-thirds of people live below $2 a day, it gives you an idea that it gives you a clear sense that they're able to serve people with low incomes.

And that ability to serve people at the low income end of the market is what's so significant because that's where the formal banking sectors really failed. The two constraints to access to finance in the past has been about distance and about cost. And the distance constraint is overcome with mobile money because rather than needing access to a bank, all you need is reception on your mobile phone and access to one of these mobile agents. When I say mobile agents, I mean they move a lot.

And the cost constraint is really simply because the technology drives down the transaction cost that it's possible to provide mobile money services with very low fees for transferring and to allow individuals to carry out very low, very small size transactions.

So, the success of M-Pesa has, and others, I know I'm talking all about Kenya but the success of M-Pesa has really inspired many other mobile phone operators to try and replicate that kind of success elsewhere. And today, there are 140 mobile money offerings around the world and there are another 104 in the pipeline. And it's this takeoff of mobile money which means that today there is an expectation that potentially with 10 years, the two point five billion people in the world who don't have access to financial services could have access.

And so, for me there are three big implications for this. And this is where I start to get quite enthusiastic and evangelical. So, the first one is that mobile money, seems to me, can really transform what it means to be poor and can provide a stepping stone to help people escape poverty. So, it's always been a defining characteristic for the poor for years to not be able to access financial services. As I've said through mobile

money it should be possible to provide those services to poor people.

But also it allows those people, encourages them to save. It allows them to borrow money from their friends and family during when they experience shock such as poor health or say a bad harvest. And that allows them to smooth their consumption. So, it really prevents people who are what we call the vulnerable poor people who tend to yo-yo in and out of poverty, to be able to stay out of poverty.

The second point is that mobile money will encourage, I believe, much greater quality and variety of goods and services for low income customers. And you're really seeing that in Kenya. There're around I think there are now over 500 companies in Kenya who are selling goods and services which can be paid for with mobile phone. And given that it's in Kenya, lots of them are targeting the low income market. And so, that just dramatically changes the nature of the access and availability to markets for low income customers who are used to operating in formal markets where the, as I say the choice in quality of goods and services are very poor.

My third point, and this is me speaking as someone who works on foreign aid, is that I believe that mobile money will really transform the way the outside parties, whether it's international donors, charities, and governments in developing countries themselves try to help the poor in the developing world.

The traditional model of foreign aid has been to try and guess who the poor are and guess what they might want. So, you might build a well in a place where you have the feeling there are a lot of poor people. With mobile money, there is the potential to have much greater confidence in who the poor are by using mobile phone records and other information and combining mobile phone records from mobile phones with other information such as biometric identification records.

And more importantly, you can transfer money to those people rather than just provide them with things you think they want. And that allows the poor people

to decide to use that money for whatever they need themselves. And this is a real game changer. There is something we call the helicopter test in the foreign aid business where we say that you should only attempt a project or an intervention if you're fairly confident that it will have a more positive impact than if you threw money out of a helicopter above a poor country.

And what mobile money has the potential to do is really to raise the bar and say, well is this intervention going to be more effective than pinging money with almost zero transaction costs to an individual who we know has very low income and putting that money right in their pocket so they can use it for what they need.

So, for that reason I think I'm, as I say, I'm a bit of a mobile money enthusiast. There are certainly challenges to enabling greater access and we might get to that later. But I hope I convinced some of you.

MR. WEST: Thank you. I like that helicopter test. I think that's a good standard. Maybe we should suggest that for the US Congress as well.

Shawn, you were mentioning your interest in female entrepreneurs in particular. And I now you've done some work in that area. First of all, what challenges do female entrepreneurs face and how can mobile technology help them gain access to capital or other types of business opportunities?

MS. COVELL: Well, I can tell you about a project that Qualcomm has worked with the Grameen Foundation in Indonesia over the last six years. And I think what's great about this project is it has some nice ties to what both Sonal and Laurence have been discussing.

So, initially our partnership with the Grameen Foundation was to partner to bring something called the Village Phone Program to Indonesia. And I don't know, for those of you who may not be familiar with this, this was born out of Muhammad Yunus' work in Bangladesh, with microfinance, something called the Village Phone came out of

this where you go into a community and a person would take a small microfinance loan. Use that loan to buy a phone kit. It would have a mobile phone, signage, business cards, perhaps a booster antenna. Bring it back to their village and retail the airtime minutes to other villagers.

And you know, that was something that Grameen called a win-win, win-win. You'd get a mobile operator who was getting more minutes of use out of that mobile phone because the whole village was using it. The microfinance agency would get a good repaying loan customer. The village was getting increased teledensity and then of course, the entrepreneur, once they paid back their loan, would have their own small business that was quite sustainable.

But herein was a great example of what Sonal was talking about, about perhaps not always knowing the issue that you're trying to solve. So, we went into Indonesia with this program having done the research. You know, we did a year's worth of research and found that, you know, if we went with this operator and this microfinance institution we should be able to roll this out.

Well, after throwing out a lot of money out of helicopter, we found after a year that the project actually was not working and the reason was because the mobile teledensity was increasing a lot faster than we predicted. Therefore, the people in the villages trying to sell the airtime weren't making enough money because too many people had phones.

So, we had to put our heads back together and rethink. And actually, out of this came something dramatically better when we actually solved the problem that was needed to be solved. And we ended up creating a social enterprise called Ruma. And what Ruma does it is enables various products and services for these entrepreneurs in the villages to sell on top of the airtime minutes.

So, for example, the first thing they did is they started to aggregate

wholesale minutes from all of the mobile operators. And the entrepreneurs in the village could not only sell the minutes on their own phone for people to use but people could come up to them with their mobile phone and say, hey, I need you to top me up on Indosat or top me up on Bhakri. And so, the entrepreneur could, over the air, get a code, give it to the person and they could top up their minutes.

So, this was one example. They came up with many other innovative applications. One was called a day job search. And this the villagers could sign up with the entrepreneur and be put on a list that would alert them of work, either in their village or nearby villages that would be applicable to them. So, thereby increasing employment.

And so, just by virtue of finding the right solution, the project has been now wildly successful. We have 15,000 of these, we call them mobile micro franchises, working in villages and they touch about one point five million unique customers. So, quite an impact. And some of the stats, for example, 82 percent of them are women, 100 percent of them are profitable. 47 percent of them, if they stay working in the portfolio for over four months are able to raise themselves above the World Bank's definition of the poverty line of making $2.50 a day or more.

So, I mean, really having a dramatic impact. Putting mobile phones with the right applications in the hands of women in various countries, in this case Indonesia. So --

MR. WEST: So, Sonal, you have worked in three sectors, the public sector, the private sector and now you're in the non-profit world. What are the biggest barriers that you see to innovation and what are the policy or operational changes that we should be considering?

MS. SHAH: So, that's a daylong seminar in itself probably. I'll just kind of -- I think there is an interesting opportunity. And I think the example that Shawn gave, that illustrates what the issue is which is it's really thinking now what the problem is we're

trying to solve and thinking about who all needs to be at the table. It might be a mobile company. It might be an app developer. It might be an engineer. It might be a government at the table. I think we all tend to come at it that it's our problem to solve.

So, government is looking at it from, okay how do I solve for my problem? And the companies are looking at it from the perspectives of what they need to do which is open up offices in whatever country they're in or get more customers. But if you really think about it, what is the problem we're trying to solve? And who all needs to be at the table in designing the solution to that problem which is I think what you all did with Grameen in Indonesia. But it needs to happen more often and more rapidly.

Instead of trying to solve the problem from that outside, doing it on the ground and allowing it -- I think this is what innovation does is it allows for rapid development. Once you do a rapid prototype, figure out if it's working. If it's not working, how it needs to adapt and then redo it again and allow it to happen on a regular basis. From a development perspective we tend to want to solve the problem at the top and then we went to go in and implement it. And it doesn't work it was a failure.

Well, the failure was in the process, not in the product necessarily. And what Google and everybody else does is they're constantly changing the product as they're getting feedback in, whether it's Facebook, or Google. As they get feedback they're constantly adding and making changes to it. And that, I think, is one way in a process of innovation that we might think about how we look at technology differently from the way we might. So, bringing the right groups of people together during rapid development.

And the last piece I would say is, from a policy perspective, a government perspective, government might want to just think about its role slightly differently which is can you be a platform of information? So, government has always seen itself as a solution provider but what if we were a platform? And what if we were to

provide information? We collect a lot of information from a lot of sectors. And what is we were made to make that information more publicly available and then allowed people to figure out what they need out of it?

So, in the US when Todd Park at HHS started to make health data more publicly available, they ran a competition for companies to use as data in whatever way they wanted to. And they found that 10 new companies got started out of the process of making data more publicly available. Sometimes it was real estate companies. Sometimes it was healthcare companies. Sometimes it was different groups of people using this information differently.

But I don't know that we know what the solutions are. I think what we know that government as a platform is a great place to say what can we provide and make open that others can use with it? Rather than trying to create the technology. Making clear policy is actually one way of getting there. But I think also we can think of ourselves not just as on the regulatory side or on the creation side but really thinking about can we be a platform to think about this in a slightly different way?

MR. WEST: Okay. Laurence, you mentioned Kenya as a success story in terms of mobile money. But obviously we can think of a lot of other countries where that has not taken place. So, why is mobile money spreading faster in some places than others?

MR. CHANDY: There have been a lot of studies attempted to answer that question and they all have slightly different answers. And the answers tend to be quite complicated which suggests that we don't actually know the answer yet.

I recently read a study by the IFC which identified 50 characteristics which could tell you whether a mobile money offering would be a success or not. And that's quite a large number. I can't believe they're all important but perhaps they are.

You're certainly right that there's been some great successes in some

countries and some real disappointments elsewhere. And in some ways that seems contrary to what our theory tells us about the challenge of bringing innovative solutions to scale which is that it's meant to be really hard to do it the first time. But once, you sussed it out there's a demonstration effect. Other people can borrow, can learn from your successes and failures and replicate much more quickly.

And that, sort of that theory or model isn't really born out in the mobile money market which presents an interesting conundrum. So, what I will say is, I think there are three factors which, to me, seem particularly important in determining success or failure. And hopefully when I describe these I can name some other countries.

So, the first is that there was a killer application which made M-Pesa successful in Kenya which is that they marked the product as allowing people to send money home. And this was in a country where there was great demand for domestic remittances. People who work in the cities sending money back to their families say, in the highlands.

Now, that need isn't present in every country and this gets back to Sonal's point about what's the problem the poor people face rather than what is the solution I can -- I have a solution. Let me try and throw it at various things and see what sticks.

So, in other countries the killer application might be something different. And for example, just to go an industrialized country example, mobile money has been very successful in Japan where it's been used to allow people to travel by public transport in Tokyo using near field communication technology. And that's been a tremendous success. And there was a real demand for that there.

So, finding that killer application means understanding the market and I think that, for example, one of the reasons why in Tanzania mobile money has been a great success is because there's a similar need, a similar demand for domestic

remittances as there is in Kenya. You wouldn't find the same thing in a country like Gambia which is very small.

A second factor which I think is very important is regulation. So, in Kenya you saw that regulations followed innovation rather than getting in the way of it. And regulation is so important in this sector, in all these innovative sectors because usually regulation is based on old technology. So, the regulations that exist in most countries, for the telecommunication sector and for the banking sector, there isn't ready made regulations to cover mobile money. And that creates a regulatory void and you need supportive regulation to allow these products to take off.

In a country like South Africa, regulation has been where Safaricom tried to roll out the exact same product, they faced a much less supportive regulatory environment. And so this is going to continue to be an issue as we see mobile money being used for other services, more complex financial services such as international remittances where regulation can be very cumbersome. And in allowing mobile money offerings to allow uses to earn interest from their account, which at the moment they can't do because mobile operators are not banks.

And the third factor I'd say is that when we've seen success, differentiating success and failure is about patience. So, I think that the culture of mobile -- I don't know the mobile industry perhaps to say this but my understanding is that the culture of the mobile industry is it's a very contestable market where the successful operators can be quite ruthless. And they try different products and they very quickly determine whether they're a success or failure. And if they're not working, they ditch them.

And in mobile money you can't make that judgment that quickly because there's a need to gain the trust of the customer. After all, you're taking their money. Often it requires a behavioral change on the part of the customer. You need to educate

the customer. So, as with any new product, you can't -- preparing the market takes times. And my belief that one of the factors which has really distinguished success and failure is that some mobile phone operators have really struggled to switch from that culture which has served them so well in getting customers for mobile phones, for that kind of greater patience required to succeed in mobile money.

And there's a nice example of that in Tanzania where initially Safaricom really wasn't working well before they brought in a manager who'd had some experience with a different mobile phone company and so understood the need for that patience.

So, there's at least three factors which I think are really important in distinguishing successful and less successful offerings.

MR. WEST: Okay. That's very helpful.

MS. COVELL: Can I just add to that for a second?

MR. WEST: Sure. Go ahead and then we'll open the floor to questions.

MS. COVELL: Because I think that it's actually pretty important that in some cases, especially when it comes to poor communities, some things might be market innovators but they may not be the one that succeed. It may be people that build upon that because they've learned what happened in the market.

And I think the failure of applications or the failure of ideas may not be the problem, may be a good reason to allow more of that to happen because you learn from it. And it happens in industry all the time. But I think sometimes in development we're afraid of failures because well if that application didn't work, we should never use it again.

That application may not have worked because it was a policy problem or it was a something else problem. But it might actually open the door to have a conversation in some of these countries. And I would urge that we think about the ability to have failure as a way of saying, there might be people that opened the door to things

but it requires a patience to recognize that creating a market will require some failures in the process of it.

MR. WEST: That is a good point to remember. Let's take some questions from the audience. You can just raise your hand. Give us your name, your organization, and we'd ask you to keep your questions brief just so we can get to as many people as possible.

And don't everybody speak at once, because, you know, that's really rude. There we go. And we have a microphone coming over to you.

MR. RING: It's going to be short so. Hi, I'm Jim Ring just a private individual. You mentioned this perhaps in the second factor when you mentioned regulation is one of the barriers. And I was wondering if there are examples where mobile innovation has sort of led access to justice. Sort of court systems or some dispute resolution sort of thing.

MS. COVELL: That might the next panel. I'll just take that as a more of a transparency governance question because I think what's happening in a lot of the developing countries is people are beginning to use mobile to get information about where corruption is. How much bribes are, making that information more publicly available and using that as a way at very local community levels, you're beginning to see this around the world.

And one of the places where it's actually rapidly developing is in India especially around when campaigns start of where the corruption is. What are your officials doing? Where are they taking bribes? That's becoming more of an application that people are beginning to develop. But I'd say it's still in the early stages especially in the developing country context.

I have not seen it in the judicial context, per se. But I think what's been a problem there and I think what a lot of people are trying to do is, what's the information

that needs to be made more public? And it's not yet an application as much as can we put the laws online so people have access to the information and they know what they're up against? In a lot of countries that's beginning to happen more regularly.

MR. WEST: And if I can just add to what she said, last week we actually did a conference in Prague on ways to fight corruption. And so, her example about using mobile technology and websites as a way to promote transparency, there's sites where people who are basically being hit up for bribes can go to this website and identify the person, the date and the amount of the bribe that was requested.

Now, this doesn't eliminate bribery but it means you don't get overcharged. You know what the going rate is in your neighborhood. So, there's some virtues at different levels of the problem.

Right here, we have a question. This young lady.

MS. SINENA: Thank you. Hi, there. My name is Sinena and I lead innovation and change management for a global bank, a for profit bank.

My question is I actually spent some time last year in Asia working with the Grameen Foundation and got to see, you know, the pragmatic solutions in terms of mobile money and the work that they're doing with microfinance. And my question is, there seems to be a ubiquitous for those solutions within our own environment in North America and in the US. You know, we've got several underserved communities when it comes to financial services or even trying to get funding where they just don't have access to capital.

Any thoughts on what we ought to be doing at home and if there are people who are doing this kind of stuff in our own environment?

MS. COVELL: Yes, I mean I would absolutely agree with you that the need is global and that global need includes the United States.

You know, I do think that there are various microfinance institutions

some of whom are working in the United States. I don't know, do you have specific examples? I don't have specific examples but I know one organization that, and I'm forgetting their name, but they've actually set up a website that matches donors with people who need microfinance loans. And I believe that it's international plus the United States.

So, that's one example where there's an organization trying to pair people.

MR. CHANDY: KEVA or Global Giving?

MS. COVELL: It might be KEVA, yes.

MS. SHAH: And they're beginning to do it domestically actually.

I just want to add to that. I think it's -- this is probably a place where the regulatory problem is a bigger problem because what you see at M-Pesa and what you see is that the regulatory system didn't know how to deal with mobile money. So, it kind of happened. And I think what you happen here is that the regulatory system is constantly monitoring.

And I know there were a couple of sites in 2008, 2009 that went out where people could individually loan to other people. And a lot of those sites are being monitored more because from a regulatory perspective since the banking crisis. So, it kind of went down to a very local level and not just at the macro level.

It's a question, I think, on a regulatory level that we probably need to look and say what is it that's getting in the way of making some of that happen. And I think that's not a question yet that's been addressed because we were busy addressing the larger regulatory issues that everything in between got caught up in it. And even innovative models got stamped out because of that reason.

What's been interesting on the other side is people looking for money on projects. This whole crowd sourcing, funding platforms are becoming bigger so you

could get on different crowd sourcing funding projects if you have a project. No one gets a tax credit for it. People are just funding these projects because they want to and they can. And that's actually an interesting model to watch, I think.

But the other piece is on the lending side. It's been partially a regulatory issue.

MS. COVELL: Yes, and Darrell, if I may just add that. I, Sonal makes a great point which I think that you also see in the healthcare industry. You know, the US and other more developed countries tend to be heavily regulated. And you know, that's with good reason. We have less accidental deaths, et cetera.

But it does stifle the invention. And I think there's a common belief that really we're going to see the new applications and services and things come out of the developing world and come back to the developed world because they're more able to test things out.

MS. SINENA: Well, they are able to be (inaudible) where almost hindered by our infrastructure today.

MS. COVELL: Absolutely.

MR. WEST: Okay, in the very back there was a question. Gentleman with his hand up.

MR. KELLOGG: Hi. My name is Cliff Kellogg from the US Treasury and I was interested in Sonal's comment about using governments as platforms for information. Because I think there is so much potential in that. And yet, we are as government quite sensitive to sharing of personal information. In fact, we're precluded from sharing certain personally identifiable information.

There's also a question of government endorsement of particular initiatives. In fact, people may view the government sharing information about a private initiative as a stamp of approval when really what we want to do is just get information out

there. So, I think we have some real challenges to think through and I wonder if the panel has any ideas on how we can do that?

MR. WEST: Laurence, you want to jump in?

MR. CHANDY: One thing I would say and this is really just echoing your point is that the data produced from the mobile industry is just so rich. And we haven't really begun to tap it to see what we can find within it and what it can tell us and how it can improve interventions which were attempted. And our ability to, in particular, help low income customers.

So, what I just wanted to tell you, a couple of examples of how mobile phone companies are using that rich data to provide new services. So, for example, in Brazil there's been a recent attempt to look at people's mobile phone records. So for example, take my wife. She uses her mobile phone a lot. And she always pays her bills.

Now that suggests that she's the kind of person who would be a great candidate for credit. She'd probably be a very keen customer and she'll probably pay her bills. And that's exactly what they've done in Brazil.

They've looked at just the months of records and been able to determine people's credit scores. And similarly with insurance premiums, they're able to look at people's records and determine their eligibility for insurance.

So, this data is very, very rich. If it's going to be shared more broadly, which I think would create much bigger benefits than just limiting it to the mobile phone company itself, there's a need to first make the data anonymous and that should be possible. But it requires coordination and effective regulation. And I think that we have very little idea of just what that data can enable us to do.

I mean the great thing with mobile phones is that all of this information is stored. No one's deleted anything yet. No one's deleted all the old files. So, there is such a large amount of data. And like I said with that example from Brazil, it was one

month of data they were able to determine people's credit eligibility.

So, harnessing that data, getting access to it I think is really key. I agree.

MR. WEST: Over here we have a question. There's a microphone coming over to you.

MR. KUMAR: Rajiv Kumar. I'm in small business. And it said, using India again as an example, where mobile technology could be used is that they've established to cut down corruption. They have two programs going on, ongoing programs. One is our national identification program to identify everybody. And the other one is transferring money directly to the people so that they can cut down middle ears where there is a lot of corruption.

Is mobile technology being pursued as something that could be done in that area?

MR. CHANDY: So, I think this is where things get really exciting because we have these different technologies, communication technologies, identification ones, transactions. And it's putting them together where you start to create really interesting things.

And my understanding in India is that they haven't yet planned to provide cash transfers through mobile phones. But clearly that potential exists and it's being done elsewhere. And I tried to make this point in my remarks but I don't think I made it very well which is that the ability to identify the poor, the poorest people is made possible through mobile phone data but it can be really enhanced if you combine mobile phone data with biometric data.

And to do a plug for some people I know, another online charity which is Give Directly, they allow anyone in this room to make a donation which goes directly to someone's phone, mobile money account in Kenya. There is no middle man and they were set up by some very bright economists, maybe some mathematicians. They are

able to say with a very high level of confidence that the people receiving that money are extremely poor.

And as I say, it's much better than that old form of giving aid where you have to sort of guess poor and so forth. So, I think that what you're describing is where there's massive, massive potential and I hope that in the next few years we start to see that biometric technology and this enthusiasm for cash transfers combined with mobile technology to really start to drive results.

MS. COVELL: And I can actually tell you about a project that Qualcomm's wireless reach initiative is working on in India. So, in India there's some called the National Rural Employment Guarantee Scheme. You may be familiar with.

And it basically says that employment is guaranteed for a certain amount of days to rural workers. But there's a ton of corruption in actually getting the money from the government to these people after they work. Often day laborers.

A problem is because they're day laborers, oftentimes their fingerprints have literally been worn off. Something that we can't imagine but this is what happens. So, this ID'ing of people is very difficult. Well, we're working with a company called BIHWA. They're a social enterprise and they've developed instead of fingerprint technology they're using voice recognition technology to confirm the identity of the workers. And thereby guarantee that they actually get the money.

Because previously what was happening is the person from the government would come out to the rural area. Perhaps they wouldn't give out half of the money but they could just sign the sheet and say they did. But now, they get the voice ID of the person. The person has to confirm that they actually got the money and thereby reducing corruption.

And another point I wanted to make just a few questions back, just on general policies and things that governments can do to help in all of these areas is that if

you do subscribe to the idea that mobile technology really is going to be a game changer in a lot of these areas: healthcare, financial services, et cetera. We really do need to work on releasing more spectrum because the need for data is only going to increase as times goes on. And spectrum is basically the highway through which all of these services travel. So, we need to look at that.

MR. WEST: Okay, we have time for one more question. So, we'll go with this gentleman right here. And then we'll move to our 10:00 a.m. panel.

MR. SAWYER: Thank you. My name is Hakeem Sawyer and I sit on the Board of a Mobile Payments Company in Sierra Leone called Splash.

The question I have is what role do you see the current established financial institutions in developing countries playing in the space and how do you see that evolving as time goes on?

MR. CHANDY: Are you talking about the existing formal banks?

MR. SAWYER: Yes.

MR. CHANDY: So, the first thing I'd say is that for some of the more complex financial services, at the moment the mobile phone operators can't provide them a loan. They need to partner with banks. And that's largely due to regulations but there are other limits as well to the kind of business models we have at the moment.

So, to go to, I think, a point I made earlier which is about the ability to provide mobile money users with interest on their accounts, in most countries only banks are allowed to provide interest. So, that requires mobile phone companies who want to get into saving products to partner with banks.

The question then, is do the banks want to get into this space? And do they want to alter the way they've behaved in the past where they haven't really targeted the low income segment. You know, a great example of how this can be done is in Kenya with Equity Bank and the product M-KESHO. And but what's special about Equity

Bank is that Equity Bank were already really changing the way they behaved to try and serve low income customers in the first place.

They were setting up banks all over the place. They were offering products which were very strongly tailored to poorer customers. So, it does require some -- it requires an interest for formal banks to get involved in this space.

So, I think that we're at a place now where mobile phone companies can offer a lot of financial services but not all of them are working alone. And it's going to require a willingness from the formal banking sector to get involved. And the way to do that is to convince them there's money to be made. So, we're still waiting, I think, for more innovative business models to be developed. But given how quickly they're already emerging, some of those who are already emerging in areas such as micro insurance, I think it's probably just a matter of time.

MR. WEST: Okay. It's clear that there are great opportunities in this area but we also need proper culture, organizations, and policies in order to facilitate innovations. So, I want to thank Shawn, Sonal and Laurence for their contributions to this discussion.

And then I'd also like to invite our next set of panelists, Juliana Gruenwald will be moderating the discussion. And she'll be joined by Katie Harbath, Rebecca Rosen and Chris Spence.

Thank you.

(Recess)

MS. GRUENWALD: All right, welcome to everybody. So, this session is focused on mobile technology and its impact on politics, elections, and democracy both here in the United States and around the world. I'm Juliana Gruenwald. I'm a technology reporter, formerly with *National Journal*. With me also is Katie Harbath. She's a policy manager of Facebook. And to her left is Rebecca Rosen, who is an associate editor of

Technology at *The Atlantic*. And then next to her is Chris Spence, who is the chief technology officer at the National Democratic Institute.

So, I'm just going to start off with a general question, guys. I mean, talk about the ways in which mobile was used in the presidential campaigns, but also, you know, in campaigns outside the United States. So, I'm going to start with Katie here.

MS. HARBATH: Sure. I think, you know, more and more mobile -- a lot of folks -- it's more and more becoming a central part of campaigns. I think we started to see it in 2010. In 2012, it became even more important. And it wasn't just, you know, the FEC finally allowing text donations or people building mobile apps, which the campaigns did, but a lot more people are browsing websites via their mobile phone. They're checking e-mail; they're checking places like Facebook. I mean, we have more than doubled our monthly active users on Facebook over the last year on mobile devices. And so more and more campaigns -- it's just becoming the method of communication that people are using to get their information and to interact with the campaigns.

MS. GRUENWALD: Rebecca?

MS. ROSEN: Thank you so much for having me.

I think, getting at what Katie's talking about, that it's kind of hard to isolate what the difference is between mobile and the rest of the Internet's effect on campaigns. But I think one of the main things from 2012 is that we're seeing that just four years is a really long time in terms of these technologies.

Like she said, Facebook is being accessed from mobile phones at a way higher rate. I mean, in 2008 the iPhone had been on shelves for a year. So, these things were very new, and now we're seeing them kind of come into maturity a bit with much more effective apps and campaign tactics that campaigns are putting resources into.

Particularly, I think one of the big things we're starting to see is the development from the campaigns of much more effective A/B testing with messaging,

with how their apps work, with how they reach voters; and over time I think that has a big effect on how much response they get from their bases.

The other thing is that when we're thinking about mobile and we're trying to kind of tease out the differences between mobile versus Web versus all the other things the Internet offers is that mobile is the ability to take these things out into the field, and that obviously has a very specific purpose in the campaign context with how campaigns are able to track data and use that data to better and more efficiently reach voters. And one of the big questions right now I think is whether that is going to benefit one party more than the other, because whether being able to more efficiently campaign in the field will benefit, for example, Democrats who live in urban areas and might have more kind of an advantage when field campaigns are easier. So, I think the Republicans are right now trying to grapple with how they can their tech to match the Democrats, which I think did have an edge in 2012.

MS. GRUENWALD: Chris?

MR. SPENCE: Sure. I'll kind of give the international perspective from NDI. We work on international democracy assistance programs around the world.

But before I do, I just want to add a couple of things on the domestic side. It was a very interesting election, I think, politically in the U.S. from the mobile and social perspective for a couple of reasons. One is that if you look at what happened in 2008 on the mobile platform -- and I'm thinking of the Obama campaign just because I happen to have seen some of them talk recently on this topic -- the 2008 campaign was really about SMS and basic uses of SMS to communicate, to organize to a certain extent, to try to raise money.

2012 really introduced smart phones and mobile apps, and I think the Obama campaign at least -- and I think Romney to a certain extent and I'm not sure exactly -- you know, I haven't heard their people talk about this, but the use of the smart

phones to mobilize voters and mobilize volunteers was actually much better this time than last time. They did things like register voters online, you know, directly while you're walking your neighborhood or sitting in front of a grocery store from a mobile platform. They had this concept of -- I think it's called Quick Donate or Quick Give or something like that where you could actually -- you register once online and fill out that God-awful form that you have to fill out in the U.S. to give money. Well, once you've done that once, you could do one SMS or one push on your app to give more money in small bits, and things like that.

So, a couple of things like that really worked well. A couple of failures they had, I think, were things like the iPad. Believe or not I think the iPad wasn't that effective in canvassing, because you had to use two hands and how do you engage people and deal with this device? So, one of their takeaways was that the iPad, surprisingly, wasn't as useful as, you know, maybe they had hoped.

I don't know if you've seen a technology called -- there's a new tech startup called Square, which is a little device you can -- a little credit card swiper that you can plug into your mobile phone and then take credit card donations on the fly. So, the Obama campaign wasn't successful in deploying that, but I think that's a big idea whose time has come, and I think you're going to see the ability to give money really sort of magnified there.

So, just a few of the takeaways that I wanted to make sure are part of this conversation as we talk about campaigns in the U.S. and globally. To bridge that to the international arena, the countries that NDR works in are not the Western democracies or any of the established ones that have high infrastructure. We're talking about emerging democracies and kind of emerging economies. So, mobile penetration is huge, and mobile penetration really is fundamentally changing the way people participate in politics, as it's affecting the way they participate in economic life, as we heard from the

embanking conversation earlier. But it's really a different level. We're more at the start of 2008 or even pre-2008 levels in many of these countries, so parties and candidates that are campaigning around the world now are using mobile for fairly straightforward activities -- SMS -- to mobilize people. The costs are so much different in terms of the ability of people to use their phones for texting and calling and are fundamentally different and much more expensive, in relative terms.

So, using it in more creative ways, techniques like flashing people's phones and doing callback techniques so the costs are borne by the parties instead of the individuals as they try to engage. So, different sorts of, you know, four- to five-year-old techniques that we saw here in the U.S. are practical abroad.

The other thing that we've seen -- that I think is the last point I would make -- is that SMS polling, or the ability for parties or civic groups or anybody else to poll people and engage voters through SMS polling, and a little bit of back-and-forth on how do you feel about what's happening in your country, how do you feel about our party is an area that's evolving. It's coming. I think it's going to be a little bit disruptive in some ways to the way parties and civic groups engage the public, because there are representation issues and other things about whether you're really getting representative samples. There are a number of issues around polling methodologies, but you're seeing more polling and partisan work around that device that I think are affecting campaigns internationally.

MS. GRUENWALD: Chris, are the people ahead of the politicians in other countries as far as the use of mobile in organizing people, organizing movements, organizing events?

MR. SPENCE: Interesting question. I think, generally speaking, one of the questions was, you know, is there a little bit of an imbalance? I have a bit of a concern that citizens are embracing these technologies more quickly than the Democratic

institutions that represent them. So, what we're seeing and what we're watching at NDI is this notion of empowering citizens at the grassroots, as it's extraordinarily important, it's something we encourage.

But from a democracy standpoint, you want to make sure that the governmental institutions, the political parties, the election monitoring groups, the civil society organizations -- all these institutions that citizens ultimately engage with in representative democracy are in fact evolving quickly enough to keep up with citizens. If they don't, we run the risk of citizens getting disillusioned, decreasing participation, potentially losing confidence in political institutions or financial institutions or, you know, companies, any other institutions, and basically disengaging citizens and setting democracy back.

So, we do have that concern. I think it's extraordinarily important to keep empowering citizens, but if we do that at the expense of the governing institutions and political institutions, we run the risk of actually setting democracy back. But that happens here in the United States as well.

MS. GRUENWALD: So, getting back to domestically, you know, we saw the FEC formally approve text donations to political campaigns this cycle, but it was pretty late in the cycle. I think it was the summer, wasn't it?

MS. HARBATH: Yes, mm-hmm.

MS. GRUENWALD: So, how much of a factor was it in fundraising, you know, this time around? If it wasn't very big, do you see it as a major source of political donations in the future? I guess I direct this at Katie, and then, Rebecca, if you want to chime in.

MS. HARBATH: Pew came out with some numbers around election day in the last couple of months, and I think it was somewhere around, you know, only about 10 percent of smart phone users had actually donated at all via text. I think, you know, it

wasn't a huge impact this cycle. I think the quick-donate stuff was a huge impact where you weren't texting I want to give $10 to Obama, and it wasn't going through the phone companies and then having to go to the campaign. It could go directly to the campaign, which is a big thing.

There's actually a huge leg -- I believe it's 90 days, I could be wrong -- where you actually text to give for the phone companies to get that money to the end group. Insofar as a campaigning, three months is a really long time. If it's a week before Election Day, that money is useless, you know, can't really be put to use. So, I think that the quick-donate stuff was more effective. I think more and more people are just donating and filling out the forms via their phone. So, you would see a lot of campaigns texting their supporters and giving them a link to where they would go to a website to give or something like that. I think that is going to be the stuff that's going to be a lot more impactful than, necessarily, your typical what you see around national disasters and the Red Cross that have texted, you know, $20 to give to the Red Cross.

MS. ROSEN: Yeah, I mean, I think that's right on.

The other thing is that the number coming out following the election from the Obama campaign of how much money raised via e-mail was huge. I think it was something like two-thirds of the amount of money. I think -- I saw just very large numbers coming in about what percent of Obama's campaign funding was raised just in response to those e-mails.

And going back to what I was saying about the A/B testing, I think a lot of people during the campaign kind of were mocking the Obama campaign subject lines of their e-mail. They were very casual, and following the campaign -- I mean, we should have intuited, but those were very strategic as it turned out, and I think in *Bloomberg News* one of the Obama campaign staffers was quoted as saying that he believed that the most successful subject line of the entire campaign in terms of fundraising response

was just “Hey,” and, I mean, part of the strategy here is obviously how to communicate to people and get them to look at something in their in-box when they are just going to click delete or archive if they think it’s all spam.

So, the more colloquial those e-mails were the better response they got. And they were saying in that article that they would test a variety of different lines and different messaging in smaller groups, and then whichever one was most effective they would send to millions of people on their list and that the less effective subject lines and framing and everything were shown to only be providing about 15 to 20 percent of the effect that the best subject lines had.

The other thing they said, and it’s very interesting, is that -- and again, this isn’t specifically mobile, but many people getting their e-mails on their phones -- that any lessons that they could deduce from their A/B testing were basically gone the next day. Like, everything is happening so fast that whatever e-mail line they found worked today wasn’t going to work tomorrow.

So, it’s this constant feedback loop of putting things out there, testing them, and then improving and improving, but there weren’t any major themes besides of a colloquial or casual natural that they could rely on, on a day-to-day basis. So, it’s more about the process of how they design these e-mails.

MS. GRUENWALD: Were people more likely to respond to a text message versus e-mail? I mean, is there any sense of that -- and this could go to anybody on the panel.

Chris -- if anybody has any thoughts on that.

MS. ROSEN: Generally, common wisdom has been that a text message tends to get a little bit more of a reaction just because it’s a lot more in your face on your phone than an e-mail is. You actually have to actively go to your e-mail box and look at e-mail and you’re getting a lot more of it. However, e-mail still is the thing that people are

much more responsive to. So, they might see a text message a lot more, but they're still a lot more likely to answer that e-mail, to take action off an e-mail coming to them.

And, she's right, you know, a lot of people are getting their e-mail off their phones now, and so that is very much a mobile activity, I think, and we haven't heard -- I would love to hear from the campaigns, and I haven't yet -- how much of their e-mail was read and opened on a mobile device, because in 2010 when I was at the Senatorial Committee -- I mean, in six months we went from 3 percent of our traffic being from mobile to 10 percent of our traffic on election day, so I can only imagine what it was this time around.

MS. GRUENWALD: Well, I mean, is that a double-edge sword there as far as a text message? I mean, there's talk about SMS spam, about, you know, text message spam and maybe that the FCC should do something to stop that. I mean, is that a potential -- could that be a problem for campaigns if people are just tired of getting, you know, spam text messages. They might ignore them all.

MS. HARBATH: True, though I still think you have to -- you know, it's a lot more, I think, regulated, for a word, but, you know, you can't just buy a massive list of cell phone numbers like you can an e-mail list. And so a lot more people have to opt in to get those text messages. And then for polling you can't use robo-calls on a cell phone. You have to have a live person who is talking them.

And so, you know, one of the interesting things from the Obama campaign was one of the reasons their Facebook app was so successful was that a huge chunk of 18- to 29-year-olds they could not reach via phone. And they couldn't reach them any other way, but they could reach about 85 percent of them by having a friend on the Facebook app reach out to them and send them a message via that.

MS. GRUENWALD: Mm-hmm. Were they doing that? Were they friends reaching out to them?

MS. HARBATH: Yeah. So, they had 600,000 people -- they had 1.2 million people use the Facebook app. 600,000 people sent messages to about 5 million folks, and they had a 20 percent response rate. So, of those 5 million about a million actually took action on that. And when you figure that a good response rate on the e-mail is 5 percent open read, a 20 percent rate of people taking action from a friend, talking to that friend, is huge. And Mesina mentioned that this is like one of the most successful things that they built, and I think that's where we're going to be moving toward in 2014 and 2016, that campaigns will be using -- whether it's mobile devices, social networks, et cetera, to get their supporters to be talking to their friends and delivering that message and it won't just be a television ad war.

MS. GRUENWALD: Chris, you wanted to say something?

MR. SPENCE: Yeah, I was just going to add one bit on the question of e-mail versus SMS versus social, and that is that one of the stories that we all have been reading about on this is about the power of data in these elections for targeting, and that's a bigger conversation but the most basic type of targeting is targeting toward the medium by which the person is likely to respond. So, the younger people are going to respond to SMS. Older people are going to likely respond to e-mail, and then of course the people on social -- if they know you're on social and you're active, they're going to target you on Facebook or on Twitter or whatever.

So, I think -- I don't know the specifics of how this was done in this particular election, but I think that the idea that we're targeting people in much more intelligent ways will lead to the decisions about which mechanism, which medium by which we engage voters.

MS. ROSEN: Can I comment on both the spam and the fee for that?

MS. GRUENWALD: Yes.

MS. ROSEN: I'd just say I'm personally really not convinced that the

spam concern is a real concern at all. In the logic of a political campaign it's the opposite of the logic of spammers, who are totally willing to annoy 99.5 percent of people for the tiny percentage of people who are going to fall for it, whereas a political campaign needs to impress the greatest number of people possible. So, I think that any risky tactic that would potentially anger huge percents of their list is just not going to be a reality.

I think that at least -- I mean, that's speaking to text messages. On e-mails I think it's pretty much the same thing. Right now most e-mail spam control has gotten so much better, because no one who's an official and who's trying to reach a lot of people wants people to start clicking "spam report" -- like "report spam" on their G-mail -- because that will start sending their things automatically into people's spam folders. So, everyone -- I mean, I'm sure you've all noticed this -- on most e-mails you've got there's a really easy opt-out, because that's a much more effective way of campaigns or companies making sure that they aren't annoying people, which is what they're worried about. So, I think the spam thing is canard.

On the Facebook app, in addition to how effective it was and how they were able to reach this group of people that they weren't really able to reach through calls or other methods, it's just also how much cheaper this is for a campaign on a per-person basis.

One thing we can talk about more is that Facebook ran this giant social experiment on Election Day as organized by this professor of political science at UCSD, James Fowler, and it's going to, I think, produce some very interesting results. They did it in 2010 as well, on a smaller scale, but basically they were able to put these voting encouragement messages on people's Facebook fees. Probably many of you saw it. Although I think, like 1 percent or 2 percent of people didn't receive this and so they've been able to create this control group where they will actually later go match voting behavior. They will look at the voter rolls and compare whether people who got this

message were more likely to show up at the polls on Election Day. And when they did this in 2010 they found it a remarkable effect. I mean, it resulted in, I think -- I have the number here somewhere but it was --

MS. HARBATH: It was -- yes, it shows 61 million people in 2010 and it showed that about -- people seeing that their friends are voting caused about 300,000 additional people to go to the polls, and when you think that this election was only decided by 428,000 votes, that can -- you know, that can make a huge difference.

MS. ROSEN: It's a huge difference. And, I mean, it fits in where basically all the research is about how you turn more people out to the polls. It's a social behavior, people feel pressured when they see their friends voting. So, in addition to all of that and how effective it was, it's not that hard to do. I mean, Facebook is able to push out this message to 65 million people much more easily than it is to go door to door for that many people -- I mean, if you are comparing it.

So, the efficiency of reaching voters through a network like Facebook is just astounding. I don't think there's anything that compares.

MS. HARBATH: And one thing to look at, too, is particularly the Obama campaign. I mean, the Romney campaign was doing this a little bit as well. But on election day people were getting notifications (inaudible) if you didn't (inaudible) the app on Facebook but you were also getting text messages saying "Stay in line" or "Encourage your friends to get to the polls" -- like, "Do not leave," "Stay in line," "Keep doing that," "Can you go make phone calls?" "Can you go do this?" And so you saw through it on election day that you were constantly being asked to do stuff and making sure that you were sharing with your friends to get out to vote, that, you know, the polls were still open, just stay in line, and keep that encouragement, and they were really melding the, you know, people being on their phones and merging it with all the field that we were doing.

MS. GRUENWALD: Yes. Well, let's talk about the use of the apps by

the two presidential campaigns. So, there was a lot made of this Romney vice-presidential pick app, and, you know, as it turned out, you know, his pick leaked out the night before it was actually announced on app. So, how valuable do you think that app was for his campaign as opposed to the Obama app?

MS. HARBATH: I think it's a little bit of comparing apples and oranges in terms of what they were looking for with the two different apps.

MS. GRUENWALD: Right.

MS. HARBATH: You know, the Romney app, it was very successful for them. They had 200,000 downloads within the first 48 hours. You know, it was one of the most downloaded apps on the day of the pick. And for them, they were looking at it to -- it's very hard to get people to download an app these days. I mean, let's be honest. There are so many of them out there. And they were looking for a way to get people to download their app that they could eventually evolve into being something that would have news and all that. So, for the Romney folks it was very effective for what they were trying to do. They got a lot of people to download it, and then after they announced the VP pick, it evolved into a larger app for information.

President Obama's app was much more focused on field You could look at this map and I could -- here in DC I would be shown flags of apartment buildings to go to and people to talk to -- not that I was going to do this, but I could go and I could, you know, talk to them and say, okay, they're a supporter of the President, they support this issue, et cetera, and then that would feed right into the Obama team's database that they were then able to use where they ran, you know, every night, like, 66,000 I think versions of the election to see what would happen. So, their app was much more field-focused versus the Romney one, which is much more -- to get people to download it, to get that contact information and to be much more of a, I would say, a news type of service than a field type of service.

MS. GRUENWALD: Well, let's switch to more international.

Chris, can you talk about how mobile technology is being used, you know, in other countries to, you know, generate support for, you know, democratic efforts? You know, obviously we've heard about the use of social media in Egypt and Iran and other places where there's been political turmoil and calls for democratic change. So, maybe you could talk a little bit about the use of mobile in those places.

MR. SPENCE: Sure. As I mentioned earlier, mobile penetration in the developing countries is extraordinary, and the levels are high and we've finally gotten over this conversation about digital divide, that there are connected citizens in some of the most challenging places. And these phones do affect how they participate in politics.

Now, there are two general areas that I would sort of throw out. One is that there are people getting access to information and communicating in different ways, and that was discussed a bit on the first panel. It has an extraordinary effect in economic development and all the things we were talking about on the first panel but also in politics. So, that's one, and that's been going on for quite a while. I think we've kind of talked about that one a lot.

The one that I think is more interesting now is that these phones provide ways for citizens to hold governments more accountable for their behavior -- or political institutions in general. So, there's a lot of talk in these areas about election monitoring and how citizens use these tools, and we've been doing this with civic groups in, you know, emerging democracies for a number of years now, or data collection and the ability for citizens to span out across the country and collect data during Election Day, during the polling activity, and report back on problems and things that are happening well, and even reporting back on results through SMS is kind of old school now.

I think the next big set of innovations in election accountability is going to be when smart phones are introduced, and now we've got the ability to put computers in

peoples' hands, very much like the U.S. campaigns are doing. So, there's a whole lot of potential there. There are a whole lot of new risks associated with smart phones, which we're going to have to deal with in some of these tougher countries, but that's sort of the election space.

Another really important space that I think doesn't get enough attention is in what's called parliamentary monitoring. How do citizens hold their parliamentarians and their elected officials more accountable for the legislation for policies and laws that are representative of citizens' needs? And we've seen a real boon the last couple of years. There's a group of about 150-ish parliamentary monitoring organizations which NDI is helping to kind of organize, but they're using technology to hold parliaments accountable for better behavior. And that includes things like, you know, some of the government as a platform for stuff that was talked about in the last discussion but getting data out there so citizens and civic groups can engage in legislative data and engage in the bill drafting process.

They've actually announced in Rome in September a global declaration on parliamentary openness, which lays out 8 or 10 principles about how parliaments can better connect with citizens using the technologies that they have, which are mobile. So, there's a whole lot of opportunity in parliamentary oversight and election oversight.

And the last I would mention, just generally, is activism. You mentioned, I think, Egypt and Iran and places citizens are using their devices to hold governments more accountable for bad behavior. We're seeing that now in Syria with all the YouTube videos that are coming out. We saw that in Egypt. And that's kind of the low-hanging fruit in a lot of ways, but the real potential -- which is untapped, I think, in the international democracy space -- is the ability to hold governments accountable for other things.

Corruption was mentioned earlier. That's an obvious one. But also government service delivery. Whenever the government is budgeting for certain services

or making promises to voters and they're saying they're doing these things, how can the citizens hold the governments accountable for that -- health services, education services, you know, water, whatever it is? So, there's a whole lot of potential for citizens to use their phones in both kind of ad hoc ways and in organized ways to hold governments accountable to deliver the services that they're promising.

So, I think that those three areas really are -- I mean, the area of general government accountability but the notion that mobile is empowering citizens to hold governments accountable is something that we all ought to be thinking a lot about, because that's a tremendous potential internationally.

MS. GRUENWALD: How great. And a lot of these countries -- you know, government does control an important level. They can control access to the communication networks. You saw in Egypt that the government cut off access to the Internet and I guess in some places mobile phones. And Syria, I believe, recently did that. I mean how do people get around that? How do people that want to support political change in these countries -- how do they help citizens get around, you know, when the government does that?

MR. SPENCE: I would say a couple of things. On the government shutdown question, it happened in Egypt as you all know; it happened in Syria. It happens on smaller scales, you know, when they stop mobile devices during elections -- mobile networks during elections in certain countries.

My view on this is that that's not a very effective tactic and that if they keep on trying to shut down networks, they're actually not solving -- they're doing more harm than they are good, from their perspective. You're basically, you know, shutting down economic activity; you're irritating your citizens who are trying to engage in communicating on both sides of the issue. In some cases, in Egypt there's a theory that when they shut down the networks it sent more people to the streets because they

couldn't find out what was going on and so he had actually supported the movement against the Mubarak regime. So, there are a lot of reasons why I think shutting down, networks, even blocking websites through things like DDOS. This notion that governments are going to control access -- I think that's an old idea. I think that they're learning that that's not effective.

The problem now is that they're evolving into more real-time techniques such as infiltrating social networks, really sophisticated ways of getting malware on people's computers and opposition parties or activists and surveilling their activities from within. They're gaining these crowd sourcing platforms now where they'll get cronies to publish a bunch of bad data onto those, you know, crowd-source maps and (inaudible) platforms and things. So, I think what they're doing is moving away from stopping access and moving toward engaging in more covert sort of espionage ways in infiltrating networks, and I think that's where our challenges are today, and I think that's a more challenging situation than just cutting off networks.

MS. GRUENWALD: But there are going to be some countries that will try to cut off networks. Are there ways to help these people? I mean, how do you do that?

MR. SPENCE: There are ways. I think -- it's very hard actually. The mobile networks are out of the question. There's nothing in a mobile network that is secure. If you're using SMS and mobile phones in these countries, it can be surveilled, and there's not a whole lot you can do. When they shut it off, you know, you have to have alternative means. The Internet's a little bit more difficult but also similarly challenging if they shut it down.

Now, again, back to the -- and there are tools you can use to get around -- you know, firewalls -- and those are reasonably effective. The interesting thing about circumvention is that groups -- the studies have shown, or maybe anecdotal or maybe

more formal studies -- that the activists are trained in this stuff. They don't actually use the tools as much as they should, so there's this whole convenient security tradeoff, which activists knowingly take risks and don't use as the tools they need for anonymity. Circumvention -- obviously, if they shut down they'll network; they'll have to do it.

Now, I think the last point I would make is that on the shutdown in Syria, for example, the very group that they were trying to stop, apparently -- which was the rebel, you know, forces, and they saw Egypt. They anticipated that they were going to shut it down. They had already set up backup networks and sort of dual channels for communication. So, the shutdown wasn't effective, because they had already set up parallel satellite networks and other ways of getting information out.

So, generally, I think circumvention is an idea that can work, and there are tools, but I think the conversation is moving way beyond that to other challenges that we face.

MS. GRUENWALD: Now, is the U.S. -- I mean, is the U.S. sort of leading the way as far as innovative uses of mobile? I mean, would everybody -- I mean, is there anybody else -- any other countries in other places that are, you know, that are also innovative, and do you have any thoughts on that?

And this is for anybody on the panel.

MS. HARBATH: In terms of politics I think that -- you know, the U.S. certain is, but I think in terms of mobile use overall Europe and overseas is actually well ahead of the U.S. in terms of adoption, in terms of using mobile technology. And, you know, overseas you actually have a lot of problems where the regulatory laws around elections have not caught up to technology. And so Japan, for instance -- anybody running for office there -- you can't actually use the Internet and social networks, et cetera, to campaign, because when they created the laws back in the 1970s and 1980s it was you can use -- I think it's like posters, billboards, and direct mail, and so the

Internet's not even included in that bucket, and there are many other countries like that, and so they haven't even caught up to, you know, allowing their candidates to interact with citizens on mobile technology when it comes to elections. But their citizens are extremely mobile.

MS. GRUENWALD: And was the U.S the first to approve text donations? Does anybody know?

I mean -- Chris? Don't know? Okay. All right

Well, why don't we open it up to the audience and see if anybody has any questions. Please say your name and your affiliation, and there's going to be people walking around with microphones I believe.

Anybody have a question? No questions.

MR. BUSKIRK: I'll ask a question.

MS. GRUENWALD: Okay, go ahead.

MR. BUSKIRK: Howard Buskirk, *Communications Daily*.

I guess listening to the panel a little bit, one of the things I'm still trying to get straight in my head following the election is one of the things you hear is that -- and I'm not a political reporter exactly, I'm more of a communications reporter -- but to the extent which the Obama campaign sort of outmaneuvered the Romney campaign maybe on some of these things and, you know, how big a factor that was. But I was just trying to -- I wanted to ask that question as directly as possible. Was that a part of what happened in November?

MS. HARBATH: I think absolutely. I think that you know, one of the -- however, though, I don't think it is that the Romney campaign was a failure and that the Obama campaign were the biggest geniuses in the world and everything they did was right, which tends to happen after an election is that that's, you know, a very stark back and white. It's a lot more grey. I mean, again, this election was decided by 428,000

votes. However, the Obama campaign definitely had some advantages in terms of they brought all they're data into one database. Very often, all their data -- your data's siloed, so your political data, your polling data, your fundraising data, stuff from (inaudible), stuff from digital, usually all of their own different databases, and where the Obama team really excelled was they spent a lot of money, and they spent a lot of time to bring all that into one spot. And then they hired people that could really -- Republicans don't have a data problem; the party has a ton of data. Where we need to catch up is analyzing that data and acting off of that data, and one of the things that -- you know, we started in 2004 with Republicans.

Ken Mehlman was a very metric-driven campaign manager, and after the '04 election the Democrats were in the spot that Republicans are now feeling like oh, my gosh, how do we catch up? How do we do similar things that they did? And they evolved, and you saw the same thing with Mesina this time. So, I think it definitely was an advantage, and they had just learned to better find the people that they needed to target and then talk to them.

MS. GRUENWALD: Go -- well, why don't we do --

MR. SPENCE: Go ahead on?

MS. GRUENWALD: Go ahead, Rebecca.

MS. HARBATH: I mean, I just think that's absolutely right, that the Democratic losses in 2004 did spur more innovation within the Democratic Party on tech and apps overall, and you saw a very effective Obama tech team this time around. They just tested everything very thoroughly and had much more success on election day with their apps and their database than the Romney team, which kind of infamously had one crisis after the other with their much, kind of wanted (inaudible) -- org database.

But I think that it's really easy to put way too much stock in what this translated to on the ground. I think that in many ways the success or failure of the two

teams' tech strategy was more indications of what was going on internally in the campaigns than it was a cause of the success or failure, so I think that the Romney team's failure to test things over and over again was part and parcel to what was maybe an over-confidence within the campaign, whereas the Obama team did a more thorough job and was more savvy on or more forward thinking on some of these things, but I don't think that that gave them the edge in the end. I think that that was part of an overall well-functioning campaign that gave them an edge in the end.

MS. GRUENWALD: So, Chris, did you want to say something?

MR. SPENCE: Yeah. From a communications perspective in this election, I don't know -- Romney or Obama -- which was better, but some of the most interesting comments I've seen about the way these technologies have affected communication, especially the social media, was this notion that in this campaign, the campaigns had to move from rapid response in communications to real-time response, and this is because of Twitter and other social media. So, the idea that the campaigns couldn't shape messaging and get together every night and think about tomorrow's messages I think Becca was just talking about but really just responding and trying to control the conversations that were already happening in social media. So, they lost control of the message and they're trying to just kind of manage communications. So, it's a very different communication strategy.

There was an Obama person, Michael Slavey, on the panel the nights that I'm referring to that I got all this information from, and he was talking about how the Obama campaign -- because of the real-time nature of this communication, they can no longer -- the political campaigns could no longer put out broad, "vaguish" political communications that they've sort of hashed out in the back rooms and thrown out, you know, onto their, you know, their press statements and through their communications mechanisms. The idea that they can do that is -- the citizens are holding them

accountable in real time to real accurate and specific communication. So, they couldn't say enough to really be reactive and get specific about their policies and specific about their communications instead of just throwing out the broad general language.

And the other point about that that I would say that I thought was very interesting was that if you look at the way the narratives are formed, particularly around the debates in this campaign -- Mindy Finn, who was on the panel, was from Twitter, and she's a Republican strategist -- she was talking about how in the presidential campaign on Twitter, within about 30 minutes into the campaign the narrative about who won had already been pretty much cemented. And so -- and the narratives about, you know, all the -- and we all know some of the funny, you know, quirks that were taken out and used in social mini-events. The idea that the conversations are happening in real time now and therefore the spin rooms are less effective -- I mean, almost ineffective, you know, the spin rooms that happen after the debates -- you know, you have the surrogates out there trying to spin the message, but it was way too late, because narratives and the public opinion and the media were watching the social media. But, you know, the mainstream media had already baked in the messages.

So, it's a very interesting, I think from a communications perspective, a very interesting change in political communication that's happening.

MS. GRUENWALD: We have a question over here, and please state your name and who you're with, if you don't mind.

MR. KUMAR: (Inaudible) Kumar in Small Business.

Going forward, how can mobile technology be used to bear support for policy positions to influence members of Congress?

MS. GRUENWALD: Anybody?

MS. HARBATH: I would say from -- I think one way will certainly be use of social media on the mobile devices. Many more members of Congress are posting to

Facebook themselves. They're posting to Twitter themselves. They're taking pictures. They are interacting with their citizens while they're walking to vote, while they're doing their day jobs, and I think -- and they're paying more attention to what people are saying to them on these different networks, a lot of which is happening via mobile. And so I think you'll see a lot more organizations and groups using things where they may be sending a text message out to their group and saying "Tweet your congressman," "Go message your congressman on Facebook," "Ask him or her to vote this way." I've also seen people start to do a lot more posts where it's like "Click here to call the switchboard and talk to your member of Congress." So I think it will just be more of an evolution of what we've been seeing before of how people contact Congress -- just moving to a mobile device. I mean, I think that beyond Congresspeople, you're also just seeing a real growth of apps and Web use from other organizations.

I mean, I was at an event last night where they're, "All right, everyone take out your smart phone and go to this URL and then click send, and they just sent, you know, 150 or how many people were in that room a message to -- I mean, D.C. doesn't really have congressional representation, but they had people sending campaign messages right there. So, I think that this will hopefully be used more widely and more effectively by nonprofits and others who are working in policy positions -- not just by Congress, who may not always be in a position that they want better communication all the time.

MR. SPENCE: I'll just add one little bit of kind of the international perspective at building on what was just said.

The problem that congressional officials have and elected officials have in general I think right now is that it's been called a filter problem or a single noise problem, but we've got all these people interacting and trying to engage with them using social media and mobile, you know, on all these different platforms. We're getting -- the

challenge, I think, is that the -- how do the legislators understand the essence of the issues that they're being asked to respond to in the cacophony of noise and information? That's one problem, and I think that problem's actually being solved. There are some really innovative technologies now for data mining and other things that are starting to get at that one.

But the other problem is they don't actually understand who their constituents are. We did a, you know, representative -- where the Congresspeople are supposed to represent citizens in their constituency, but online it's very hard to understand which of these people that are screaming at you through these platforms are your constituents and which aren't.

And there's an interesting -- I'll plug a real innovative project that I happened to see at an innovation conference last week here in Maryland. It's called mymaryland.net. You haven't seen it yet, because it's being launched early next year. But the notion there is that it's a social platform that brings in social, you know, information from other platforms, like Facebook, but it allows Congresspeople to go in -- this is state-level elected officials -- to go in and actually see the social conversations happening among their constituents, so it has a voter file underneath it. So, it will filter out all of the noise that's happening on social media about the issues or about their committee work or whatever and let them actually understand what their constituents are saying. So, that's an interesting idea that I think we're going to try to talk to them about -- that kind of concept working internationally.

MS. GRUENWALD: Question right here.

MR. ALTMAN: Will the --

MS. GRUENWALD: Can you say your name and --

MR. ALTMAN: Oh, I'm sorry, Fred Altman. I attend a lot of these.

(Laughter)

Will the increase in the use of mobile technology, other technologies put a greater emphasis on the individuals and maybe let our representatives spend less time getting money and more time responding to the public?

MS. ROSEN: I think it is certainly -- you know, one of the things we saw both at the Romney campaign and very much at the Obama campaign is that they're become a lot more effective in terms of getting small dollar donations and raising that money. You still need to raise money to have a campaign, and so I don't think that will go away. I do think, though, that mobile technologies are making it easier for members of Congress, elected officials, candidates to engage with their supporters on a more real-time basis whether they're using Twitter, Facebook, et cetera. So, that way, individuals can -- I do think individuals are getting a lot more direct access to their members and easier access than what they had before because of these technologies.

But, I mean, you can't these things outside the context of our current campaign finances, which is what controls their fundraising schedules. I mean, these changes are a drop in the bucket compared with the legal regimes that we have that encourage our current campaign finance behavior.

So, I think, like, yeah, there is more direct access. It is easier to send an e-mail than it was to write a letter, whatever. But those things are really small changes compared with the way we've decided to set up our electoral system. So, I'm not that hopeful on that account.

MS. GRUENWALD: Well, you did -- you know, I think you -- somebody mentioned that, you know, it's a lot cheaper to reach people this way, and I think we said that with the campaigns. I think there was new data that came out the last few days to show that the Romney campaign spent a lot more money trying to raise money as opposed to the Obama campaign. Can you guys talk about just, you know, about that, about how we can reduce fundraising costs.

MS. HARBATH: It can reduce fundraising costs, but I think a big thing, too, is that it actually -- it is still pretty expensive to build this technology. I mean, the Obama campaign -- they actually -- yesterday *Huffington Post* had a story. I believe they spent double the amount on staff salaries than the Romney campaign.

MS. GRUENWALD: For the whole campaign or the tech?

MS. HARBATH: Whole Campaign, I think. The tech was a huge part of that. They brought everything in-house and so they built everything in-house. I mean, they spent a ton of money building up these technologies to become very efficient at fundraising, at reaching voters, et cetera. So, they put a lot of money into infrastructure that will hopefully, you know, be able to live for a very long time. But -- so, it's a little bit of a myth that it's cheaper. I think the money is moving to different areas. But they did spend a lot more effectively. They were able to use that data and their TV bind to where the Obama campaign spent less money on television ads but ran more TV ads than the Romney campaign did.

MS. ROSEN: Yeah, and I think the Obama campaign is also being credited with having more targeted TV ads, that they were getting actual data from the set boxes, the TV sets. So, they were able to know -- I think -- I don't remember the exact details of it, but they were able to target their ads on times of days that were cheaper but that they knew that, more likely, Democratic voters were watching TV based on the like advanced status that they had.

I think one thing you kind of heard, first of all, going into this past election cycle was that TV overall was just going to be less effective because of Tivo and other people who are watching TV on mine who don't want Jazz or one thing or the other. But I don't think we saw that play out to the extent people kind of anticipated going in. I mean, certainly many of the most effective as of the cycle were very hard-hitting, targeted TV ads in swing states. So, whether -- I mean, like I said before, four years is a long time in

technology, and whether that will be different in 2016 -- obviously we have a mid-term election between now and then, but I think a lot of innovation happens on the presidential campaigns when you have much more money behind them. So, we'll see.

But those kinds of shifts in the market could change how much fundraising is really required of people. But, as Katie said, there are going to be new costs also.

MS. GRUENWALD: Is there a risk for candidates? You mentioned that, you know, people can -- you know, candidates or politicians can tweet off, you know, with their mobile phones. And I'm thinking of a Republican congressional person -- I'm not going to say the name, because I'm not a hundred percent sure who it was -- but they were in a hearing and they said something really derogatory about a fellow member, like, oh, that person's giving a really boring speech, and they tweeted it and they got all sorts of flack over that. So, is there a risk here for that instantaneous reach, you know, with your constituents?

MS. HARBATH: Yes, but only because the technology is not causing the member of Congress to say the stupid thing.

MS. GRUENWALD: Right.

MS. ROSEN: Right.

MS. HARBATH: It's not because all of a sudden we have Facebook and Twitter and (inaudible) mobile phones that people are saying really stupid stuff. I think it's just making it a lot easier for people to -- a lot more people to see that and for you to not -- you have to be careful about what you say and where you say it, and it's just a lot more easier for that to get around. But I think, you know, those things happening are very rear, and it's the thing people love to focus on. But people don't look at, you know, how much day-to-day these members are saying good stuff on social media and actually having those conversations.

MR. SPENCE: I would just say one little bit about that, and that is impulse buying or spontaneous tweeting or whatever -- it's all empowered and enabled by these technologies. But from in the private sector, you know, all night Amazon and others with their one-click and all that, it's really trying to leverage people's impulses -- you know, their quick instincts and their emotions. And I think that that will and is playing itself out in politics. I mean, hopefully they're smart enough, these politicians, or their learning through several of the cases we've seen in the last several years not to impulse tweet. (Laughter) But there is -- you know, the technology has certainly enabled that emotional reaction, which can be great for commerce and it can be bad for politics.

MS. GRUENWALD: Do we have any other questions? Over here. Again, say your name and who you're with, if you don't mind.

MS. McNEIL: I'm Mary McNeil. I'm with the World Bank, and I'm interested in some follow-up questions with Chris about the international arena.

I was intrigued by what you were saying about the risks of citizen engagement when governments cannot respond. And of course at the Bank we're very keen on what we can do to help governments respond, because we feel that it's kind of our area. So, if you could just talk a little bit about that or things you know of and could relate in terms of both the risk of government not responding and what governments can do to be a little bit more -- and these are governments that are not maybe inclined to be open. Some of them are, though, and some of them are not.

MR. SPENCE: Yeah, I think -- thanks for the question, because that really is an important topic and one that I think international organizations need to grapple with.

The risks, I think, can be simplified a little bit to say that from a democracy perspective the risk is that people become disillusioned in their government, in their political parties, in their financial institutions if that -- you know, whatever the area

that they're thinking about. The risk is that they become disillusioned. If they become disillusioned, it lowers participation in politics. And, actually, frankly, they'll begin -- I believe, and I think it happens a little bit in the United States already where people will look for other ways to circumvent or work their way around the existing institutions.

An example of that internationally, which I could just throw out, is in election monitoring. We've got these methodologies where thousands of trained citizens go out and can really do a rigorous and methodical analysis of what happens in an election process -- pre-election, Election Day, and the voting and counting process. That is a very well established methodology. Technology helps make it more effective. And it helps citizens understand and get some level of confidence in their electoral process. If the election went well, and a civic group says it went well, that helps people understand and increases credibility.

These new technologies in some cases allow citizens nowadays to run around and text in anecdotal experiences and put them on maps and put them on websites. And that's a powerful idea in the sense of your engaging more people, but it runs the risk of undermining a credible election-monitoring effort that actually can help the citizens understand. You don't want or two bad incidents on a website to misrepresent what actually happened. So, we're trying to figure out ways to grapple with that sort of complementarity there, and that's an example that I think the risk -- that we're talking about.

In term of what governments can do, there' the open data stuff -- and, absolutely, the bank needs to be involved in thinking about innovating and getting the government institutions to evolve. The government is a platform (inaudible) as a concept, which I think is a very powerful idea. I know people at the bank are thinking about this as well, and the open data initiatives are important I think but at a more practical, a kind of more tactical level if you look at institution by institution. I think about parliaments

primarily and political parties and civic groups but government as well, because we need to engage them in innovation and engage them in changing the way they think about information sharing, about communication, and the technology tools I think are there, and in a lot of cases they're evolving and some of them are coming out of innovation labs in Africa and elsewhere.

But the problem is often politics, you know, and in the political environment where NDI works, it's as you mentioned. The governments don't necessarily want to communicate. Even in our government, in the open data space, you see some critiques about how certain data sets are shared but certain ones aren't and who makes those decisions.

So, the political will is a huge piece. I think the bank and NDI and others can really drive advocacy. Our civic partners at the parliamentary groups that I mentioned -- you know, half of their job is advocating for openness and advocating for better communication and innovation in parliament. So, there's a role for civil society there as well.

So, I guess I would say advocacy -- I think that the technologies are there. In many cases, they just aren't being applied. And the challenges for us, especially in the large government institutions, are change management, you know? At NDI -- we're trying to get NDI to be more innovative and change, and even a small organization like us -- 1300 people in 70 countries -- nothing like the bank or the governments -- change is hard. So, change management is really at the core of all of this.

MS. GRUENWALD: Well, I have one -- oh, we have one question back there.

SPEAKER: Hi, I have a question specifically about the Life of Julia persona campaign that came out. Personally, when I saw it I thought one campaign was

playing checkers and one campaign was playing chess. Do you see more of those types of targeted persona campaigns coming out, or is that kind of one and done?

MS. HARBATH: That was kind of --

MS. GRUENWALD: Explain what that is, too, for people that might not be familiar.

MS. HARBATH: That was the Obama campaign.

MS. ROSEN: Obama campaign's video, but I don't really --

MS. HARBATH: It was -- so, what the Obama campaign did is they took -- to help talk about, I believe it was the health care bill, or it may have been all of his policies overall, but I believe it's mainly focused on the health care bill. I could be wrong. But it was last year, 2011 I believe, or early 2012, where they took the life starting from when she was born, taking her throughout her entire life and how the President's policies would help her. So, education when you were small, getting your first job, buying a house, having a family, all the way to retirement. And it was very specific, you know, to her, and it helped -- they were trying to bring down to an individual level what these broad policies could do for you to help people relate, of what could happen. I only saw that done once. I believe the Obama campaign said they thought it was very effective in terms of what they did.

I think more campaigns are going to try to look to do more of that, because being able to take -- we see it on Facebook where the more local and the more personal you can take this information and present it to people, the much more likely they are to engage with it, the much more likely they are to internalize it. And so you see, anything from NPR becoming a lot more local and targeting their posts to people in Seattle, something specific about Seattle versus people in somewhere like, you know, Milwaukee, Wisconsin, doing more like that. I think you'll maybe see a lot more campaigns, but I haven't seen a lot of them doing specific things like the Life of Julia.

MS. GRUENWALD: Okay, I have one quick last question. Do you think we'll see mobile voting at any time I the future? Do you think that's at all possible? Anybody talking about that? Just really quick, anybody.

MS. HARBATH: People are talking about it, but I don't think it's any --

MS. ROSEN: I mean, New Jersey did try to do some online voting in the wake of Hurricane Sandy, and I think on Election Day it was kind of a disaster. The way it worked was people had to e-mail their, like, county clerk and get a form and then they had to register for this overseas voting, because what happened is New Jersey already had some amount of e-mail voting allowed for military people who are overseas. And what they did was they issued us an order that officially declared people who were displaced by the hurricane to be overseas voters. So, then all these people had to use this system that had been set up for a very small number of people, and it was a much larger group of people, and it was kind of like an unmitigated disaster on Election Day. Many people had to -- they e-mailed their county clerk, who gave them a form they had to e-mail back and forth, and all these county clerks' e-mail boxes got full. And so they extended voting till Friday, and whatever happened, I mean, I think the -- if it is going to happen on a wider scale, it needs a lot more forethought than what the State -- I mean, I am a proud New Jersey -- former New Jersey resident. But they were not able to put in the kind of forethought on this short notice already in the midst of a disaster, and it really wasn't the best trial run for that kind of e-voting. Whether those things will become more common over time, I think there are a lot of security concerns that need to be -- security hurdles and legal hurdles that are going to need to be worked out. So, even if the technology is there, it will be far behind I think.

MS. GRUENWALD: All right, I guess we're going to have to end it there.

So, sorry, Chris.

Thank you all for joining us.

MR. BUSKIRK: I'm Howard Buskirk with *Communications Daily* and welcome to the final panel of the day. The topic of this panel is the universal impact of mobile technology and we have a very good line up of guests. I'm going to start out by asking them a couple of questions and then hopefully entertain some questions from the audience because I really like it when these things are fairly lively and we get some interaction. Questions from the audience are always a good thing so please try to come up with a couple of good questions that would make this whole experience more satisfying for everybody.

Immediately to my left is Tom Carroll who is the president of the National Commission on Teaching and America's Future. To his left is Toshi Nakamura and he's the founder and CEO of Kopernik, like Copernicus, that's what I'm told. And then finally Eric Tyler from the New America Foundation, welcome.

Let me start by just asking Tom to talk a little bit about what it is that he does and what does your association do and what are your concerns right now in terms of this broader topic?

MR. CARROLL: The National Commission on Teaching and America's Future is an independent non-government agency which is non-partisan, non-profit and non-violent, okay (laughter). We work on improving teaching quality and we believe in the 21st Century that we need a fundamental transformation in a way we order and organize teaching and learning in schools.

Listening to this conversation this morning has been very helpful. When it comes to thinking about mobile learning and education I'd ask you to back up and think about a bigger picture for a minute. Imagine that you are the Wright brothers. You've just flown the first airplane, the first flight in history. People are running up to you in excitement, congratulating you and someone walks up and says, that's really impressive but how is it going to fix the railroad? That question sounds like a dumb question now but

then the railroad was the prevailing mode of transportation; it was in much need of improvement and the biggest question on people's mind was how to fix the railroad. The Wright brothers did not focus on fixing the railroad, they figured out how to fly. And about 70 years later NASA landed Apollo on the moon, the first human travel in space. Now, in less than half that time we're carrying smart phones in our pockets. How many people have a smart phone with them right now? Everybody. When you hold a smart phone in your hand, you have more computing power in your hand than Apollo had when it landed on the moon. Not only do you have more computing power in your hand, you are connected to a global learning ecosystem that is more powerful than anyone could have imagined when Apollo landed on the moon. This morning we heard that there are six billion mobile connections. We have the largest open learning ecosystem that the world has ever known.

So I say all of this to say that if we ask the wrong question, if we ask how we're going to use this to fix the railroad, when you ask the wrong question the answer becomes part of the problem. So if we ask how do we use mobile devices to fix education in schools, that's the wrong question. The question is not how to use these technologies and how to integrate them into schools; the question is how to integrate schools into the mobile learning ecosystem that everyone lives and works in every day. That's the challenge that we face, is empowering teachers and students to participate as we all do every day in this open learning environment. So that's our challenge.

MR. BUSKIRK: As a follow up question let me ask you for a couple of specific examples. What are some good examples of the way teachers are using mobile technologies now and that kind of thing because I'd really like to try to be specific in these things.

MR. CARROLL: Sure. So the first thing I would say then, building on what I just said, is that we used to go to school to learn to do a job; now learning is the

job. The job that everyone will do for the rest of their lives is learning. Constantly learning, collaborating, pulling information for personal use, for personal engagement and solving problems.

So one of the most powerful uses of mobile devices, and mobile device apps really, is in personalized learning. One of the dreams in education has always been able to have the capacity to move beyond one-size-fits-all, broadcast the same text-based knowledge to all students at the same time. Personalized learning is now possible. School of One in New York City, New Classrooms, which is a spinoff from School of One, Khan Academy, a number of different places are now creating what we could call learning playlists. So each student has a learning playlist that is closely managed to their own personal learning progression. So that students are moving on their own learning path at their own pace and teachers are no longer doing one-size-fits-all instruction for all students, but literally each day, if not each week, the learning activities for those students can be customized to what they need at the moment.

MR. BUSKIRK: And we're seeing a lot of that kind of thing in education these days?

MR. CARROLL: It's emerging so we could probably look at about a half a dozen examples of that happening right now. Another kind of example is a situation in which the distinction between teachers and students is blurring so that they're becoming co-learners. So that students in communities -- we're running projects like this in Maryland where teams of six to eight teachers with a team of several dozen students and NASA engineers from NASA Goddard are in one learning team together, all connected with these mobile devices. They're looking at the environmental impact on the Chesapeake Bay of water runoff from their school grounds and how they can control that. They can upload pictures of their school grounds to Google Earth; they can map what's happening around their community and what happens to rain runoff and they can

experiment with ways to control that runoff by planting gardens and trees. So they're doing that right now.

So, again, the idea is that the learning doesn't happen in schools and classrooms anymore; the learning is in an open learning ecosystem. Multiple people can organize into learning teams to engage in a more powerful learning environment. It's no longer a question in education and in an innovation economy where you're going through an employer. It's not what you know, it's what you know and then what you can do with what you know and then what you can create with what you know. So the model of education is being pushed hard to shift dramatically from just passing on content to enabling learners to work in teams to do work with their knowledge and to create innovation with their knowledge.

MR. BUSKIRK: And I assume you have a lot of contact with teachers who are out in the field actually teaching?

MR. CARROLL: One of things that we're doing -- and actually I would thank Qualcomm and the Wireless Reach initiative -- one of things we're doing is we work with nine university school district partnerships to create a mobile learning community among the teachers, the university faculty, and the accomplished teachers in the school districts so that they're now one community because historically one of the biggest problems we've had in education -- and this is around the world -- is the isolation of teachers and the fragmentation of the education system. We have a tremendous attrition rate among beginning teachers who tell us, I'm teaching alone, I don't have the support I need, I'm in the most challenging job of my life, I'm struggling and I don't have the help I need. And so what we're saying is, in the 21st Century when everyone has one of these in their pocket no one should say that they're working alone. So that beginning teachers and student teachers are inducted from the beginning into a professional community in which they know if they're struggling with students who have a math

challenge they can immediately reach out to math faculty at the university, accomplished math teachers in the school district, to work with that student with a more powerful strategy.

MR. BUSKIRK: I guess where I was going with that also was is this something that teachers are fully embracing at this point? I mean, what's the mindset out there in these schools?

MR. CARROLL: I think we're in a transition mode right now. I think there are three states or three modes right now in teaching. The most traditional mode which is where most teachers still are is in a stand alone artisan practice. Each teacher is an expert in her classroom and many of those teachers become artisan experts; they're really amazing accomplished educators but they're working alone. That's where most teachers still are. A transition point has been called learning communities where teachers come out of classrooms, they collaborate, they share their best practice but they go back to their classroom. Most of that has been happening face to face. Probably not more than 10 percent of teachers are in that world.

What we're pushing for is true professional learning teams that are like healthcare teams, teams that are in every other sector of a high performing economy where educators start to differentiate their roles; some are assessment specialists, some are direct instruction, some are tutoring, some are connected to the web, and they orchestrate themselves using these devices and other digital technology into a team. That's a very small percentage right now but it's very rapidly emerging again.

School of One, New Classrooms, Khan Academy, these places are rapidly moving to an orchestration of multiple skills. MacArthur Foundation has been a leader in funding first students who were developing their own digital learning device applications. Take a look at the MacArthur Foundation website. MacArthur now is supporting something they call a *hive*. A *hive* is a learning network in a community that is also a

face to face community: museums, libraries, theaters, schools that are woven together into one learning space in which students and teachers move back and forth. They're doing that in Chicago and in New York City.

MR. BUSKIRK: Well, I'm really interested in this. At one point in my life I was an education reporter but that was a long time ago. I'd love to come back to you.

Toshi, let's talk a little bit about your company which is described as an online marketplace for the developing world. Tell us what that means.

MR. NAKAMURA: Sure. So, Kopernik, my organization ran the platform to distribute simple life-changing technologies to the poorest communities in developing countries. So we're dealing with technologies like clean cook stove, water purification, solar light, drip irrigation that are simple yet will significantly improve the socio-economic productiveness of the poor people's lives.

We are selecting the simple and affordable technologies and then we showcase them on our website and then existing communities, local organizations who have been working in the poor communities for many years, they will browse through this list of technologies and they will select the ones that can solve their own challenges in their own communities. So some organization may choose water filtration, some communities may choose solar light, depending on their needs. So that becomes a proposal and then we crowd fund to realize these projects and we use the funds that we raised to kick start the distribution process. And the local organizations get these products and then they will distribute to the household and end user level. And we've been operating for the almost three years and reached nearly 90,000 people 11 countries.

MR. BUSKIRK: What are the 11 countries, by the way?

MR. NAKAMURA: It's Indonesia, it's Timor-Leste, the Philippines, India, Kenya, Uganda, Nigeria, Haiti, these countries.

So the distribution side has been relatively smooth and then we've been growing, that's good. But the next question is, are we making any impact? So we brought these technologies, how are people's lives improving? Are they spending less money on purchasing kerosene? Are they spending less time in collecting firewood? So these are the things that we were very much concerned about so we were sending a lot of graduate students from the leading institutions to spend between three to six months to conduct a survey, to compare before and after this technology distribution.

And that has been pretty good and we got quite a lot of data on how people live in the remote areas but we started to ask -- this process of selecting people and sending people was quite cumbersome and so we said maybe we can try a mobile phone. And we looked at the different kinds of platforms and the FrontlineSMS was pretty handy software which was also free. So we started to ask questions. We directly send the questions to the end users of, let's say, clean cook stove. Do you like these technologies on a scale of one to five? And we get this data and we have an average and we put it on the website so in a way we are creating something like Amazon, like a technology platform. So the future users would know, okay, this technology is getting very good reviews from this community so this may work.

So in collecting this feedback data and impact data we are now starting to use these mobile platforms to compliment more in depth research that we are doing through the graduate students.

MR. BUSKIRK: And is it something where through the use of mobile technologies then it's much easier to collect information? I mean, what would it have been like before you could use the mobile platform?

MR. NAKAMURA: There is a time lag so in the mobile question you get the response immediately so you actually know what the users are thinking about the

technology right now, while if you send to the people it takes a few months for us to really understand what people are saying.

MR. BUSKIRK: Okay, so it's a big timing thing.

MR. NAKAMURA: It's timing and it's cheaper.

MR. BUSKIRK: It's cheaper. Like what kind of cost savings do you think you're seeing because you can use mobile technology instead of what was available before the onslaught of the mobile world?

MR. NAKAMURA: We are a very lean organization and sending graduate students we were not spending much money because the schools were paying. But on the other hand we are spending about $4,000 to $5,000 to send a person to a particular project and it's a three to four month project, but with the mobile it's free.

MR. BUSKIRK: So for a small lean organization that is of significant savings, basically.

MR. NAKAMURA: It is a significant saving and also we would be more accountable because when something goes wrong we are required to respond to these problems. And then also the companies who are manufacturing these technologies are also required to be more accountable because if some products are broken and there is a warranty period and we actually make them replace the product. So that is increasing sort of the accountability of the community organizations and also the companies that are producing these new technologies for the poor.

MR. BUSKIRK: Eric, let me ask you a couple of questions. Let's start out by talking a little bit about -- you're an analyst with the New America Foundation. What's the New America Foundation and what areas do you work in?

MR. TYLER: The new America Foundation is a think tank based here in Washington, D.C. and there are a number of different focus areas. The focus area that I focus my research on is on the intersection of technology, mobile technology, economic

development in entrepreneurship. And broadly speaking I think when we're looking at the universal impact of mobile technology around the world we need to keep in mind three main components. Tom mentioned before that there are six billion mobile phone subscribers in the world; five billion of those are located in the developing world. When you talk about developed infrastructure telecommunications infrastructure is often the most modernized and developed infrastructure in some of these developing economies, and so how do you leverage that for impact? And I think speaks to this larger trend that we're seeing that was discussed in the first panel which is that mobile technology, I would argue, isn't just a change agent, it's a leapfrogging agent.

And so what we've seen is that mobile technology and mobile phones have leapfrogged and skipped the development of technology from landlines to cellular towers and as well as changing the velocity of money in places like Kenya, the Philippines, as well as Tanzania, and I think one of the areas of interest that I've focused on increasingly, because I think this where even in the developing world the trend is going towards, is the mobile web. So even as we were mentioning before and everyone raised their hands when asked whether they had a mobile device in their pocket and Pew came out with a study that said 85 percent of adults over the age of 18 have a mobile phone; 45 percent have a smart phone. And when you look at the dichotomy between the developing world, non-smart phones or future phones are still ubiquitous but increasingly we're seeing smart phones even in the developing world which I think is a really interesting trend. I was playing around with a $50 Android device that has 3G connectivity and a camera phone in Kenya. And if you look at Kenya, as an example of the mobile web and this mobile leapfrogging you'll see that the Central Bank of Kenya just released data that said when it comes to people accessing the web, 99 percent access the web through their mobile phone.

And so this has tremendous potential in terms of focusing on these different research areas and I think what's even more interesting is that these three components are pointing us in a direction where mobile devices are not just becoming an access point to important information but they're becoming an authoring point. And I've tried to focus my research on how to make this more of a meaningful contribution at the global scale.

MR. BUSKIRK: Well, one of the things I wanted to ask you about -- you seem very enthusiastic about all this. I wanted to ask you about, I was just in Europe a couple weeks ago. And one of the last couple times I've been back, one of the things I've noticed is that, like maybe five or eight years ago, some of the U.S. companies where they had European -- like the cell phone makers, the guys who were like working in the U.S. would have like European cell phones because they were so much better. But now it's like some of the U.S. models are like the big thing over there. And I'm just wondering is it your sense that the U.S. is sort of regaining like a very strong position versus the rest of the world in terms of, you know, its place in the mobile world?

MR. TYLER: Yeah, I think when you're comparing, you know, the U.S., one of the things that it is a leader or the leader on is 4G or LTE technologies. And so in that way the U.S. is a very interesting market that's leading the way. You know, I was conducting research in India, and I was struck by the fact that there were 7 mobile network operators with more than 50 million users. And what that does, that extremely competitive environment has driven down costs not just for voice services, but increasingly to generate revenue they have to push their users into data revenues and data models.

And so when it comes to devices, I think when you look at the developing world and, as I was saying before, I think that's the large growth areas, Android services in these open platforms are literally leading the way as well. And so I would argue what's

interesting or when you're talking about devices and when you're talking about different markets, you know, each has a different context and each kind of has an interesting story to be told when it comes to innovation or where there's impact happening.

MR. BUSKIRK: Okay. Let me ask a question and then we'll just go down the line and everybody respond to it. So where are we today? That's one of the things I have trouble figuring out because some of the things you'll hear as well, you know, mobiles really coming on, but you haven't see anything yet. And how are things going to change in the next 10 or 15 years in terms of -- I mean, what is the -- and, you know, nobody's going to hold you -- because nobody's going to remember probably what you said tomorrow, so. But, I mean, what are we going to see over the next 10 or 15 years in terms of the way the mobility's moving?

And let's start -- well, let's break things up a little bit. Eric, you go first.

MR. TYLER: Yeah, and I think I was touching on this a little before, but I think when it comes to the mobile web, you know, there's going to be a huge, not just within the United States, but globally speaking, a huge trend towards different developing countries coming on to the web through their mobile phones. The large part of the world will access the web through their mobile phone and this has tremendous implications for policy and a wide range of things.

And I think as well, what was touched on in the first panel, which I would like to echo again is that mobile data presents a huge opportunity to better understand underserved communities around the world, whether it be, you know, an interesting example was in the aftermath of the Haiti earthquake. The mobile network operators in Haiti opened up their data to better track displaced populations, to channel relief services, to track the outbreak of cholera. And I think, you know, as this mobile web penetration grows, this data is just going to become richer and richer, and there's going to be more interesting insights to be gleaned. Obviously privacy issues are going to need to be

accounted for and anonymized data, but there's a lot of interesting movements in this space that we're already seeing.

I was talking with Robert Kirkpatrick of the U.N. Global Pulse and he was convening the 10 leading mobile network operators in Indonesia of a ministry agency and they're looking to create MOUs right now around better sharing of data. And I think that, you know, there's a lot of really exciting things. I'm on the side that we're at the tip of the iceberg and we're going to keep on moving really fast, and we need to position ourselves for a lot of these trends globally as well here in the United States.

MR. BUSKIRK: Toshi, what do you think? Where are we headed on this?

MR. NAKAMURA: I can't really comment on the technical side, but I think we had a discussion before that the aid industry has not been very accountability for the result and then this impact on the ground has not been the primary focus of what the industries do. I used to work for the U.N. for 10 years, so I do understand how things work. We look at the disbursement rate rather than what actual impact the aid is making.

But I think it is already changing. The mobile technologies and increased communication will significantly transform the power relationship between the poor and the service providers and everybody else. So I think it will be more difficult to do things that do not have an actual impact on the ground and then I think it will further empower the poor communities.

MR. BUSKIRK: Tom?

MR. CARROLL: I think that what's happening has already been happening and we've been listening to it all morning, and it's really about mobile devices are taking us to deinstitutionalization of everything. Okay? So, Toshi, your example is great because what I keep coming back to is that we are in a mobile learning community. McLuhan called it a global village, but we're in a mobile learning community, that's what

the conversation has been about all morning, that is deinstitutionalizing what we do so that development projects now are actually being deinstitutionalized. The people that you're trying to work directly with, you're working directly with them in real time, you're getting real-time information. You're finding out if it works, you're improving it. You're doing it faster and more cost-effectively as a result of that deinstitutionalization.

In education it's already happened in the sense that the students -- I was just in New York City a few weeks ago where students who go into high schools in New York City, they have to go through a metal detector. If they've got a smart phone with them, they need to check it in a locker and pay a dollar a day to check it there. Okay. So you're talking about low-income students, a dollar a day is a lot of money. And you're talking about taking the most powerful learning tool we've ever had and telling them to put it in the locker and then they go into school. When they come back out of that institution, they take that out of the locker, they're now participating again in a more powerful learning environment than we've ever had before and than they just had in the school.

So this is all about deinstitutionalizing. It's about integrating us into one global I would call it a learning community or McLuhan called it a global village. But we're in one learning space now, constantly sharing and learning from each other, and it's happened already.

MR. BUSKIRK: Okay. And to be topical, one of the big things, you know, that's sort of emerging this morning and there's a lot of concern, right now there's a United Nations conference going on and it's just breaking up in Dubai and, you know, I think there's some concern about the Internet governance stuff that's come out of that. And, you know, we're still -- but I think people are still trying to get to the bottom of exactly what happened, but it doesn't look like the news is good for people, you know, who are concerned about the freedom of the Internet internationally.

I guess I wanted to ask the three of you, and we'll start this time with Tom and then go down and then we can go to audience questions, but what are the big potential impediments? I mean, what could kind of slow things down? What could keep things in your part of the world from developing to the full extent that people would like to see them develop right now?

MR. CARROLL: Well, they're on several sides. One is -- and this conference that you just talked about, the U.N. conference, is about the extent to which we can keep this learning community open, an open web, an open network, okay, which I believe is essential. In education we're already in a deeply closed, locked-down environment. School environments are compliance control environments. They are surrounded by huge firewalls that are like moats around castles. So that firewall creates a very controlled environment that is a serious barrier to using these technologies effectively and educators just need to get serious about taking down those firewalls.

So we've got some barriers that exist. I think we also have some risks on the open side, okay, which have to do with it being the Wild West basically. If it's in education, you know, what's real? What is known? What information can you trust? There are some real issues there that we haven't resolved because we're moving so rapidly into deinstitutionalization. And the consequences of being in a Wild West environment drive us back to more control, more regulation, more firewalls.

The one other risk I see that I'm intrigued by the political conversation is that we now have the capacity to create kind of our own realities, to create kind of a world of people and knowledge around us that is in total consonance with us and that separates us off from other communities. And I think we just saw that in the campaign that Romney and Obama ran. There was all this noise during the fall about polls and whose polls were right. And one day Romney was up, the next day Obama's up, and the polls were going like this. David Axelrod was asked by someone on one of the networks,

so who's right? You know, what's right here? And Axelrod said they know what they know, we know what we know, we'll find out who's right on Election Day.

So he was talking about the idea that they thought they had better data, but what it really was coming down to was both of those campaigns really believed they knew what was happening. It turned out one of them did and one of them didn't. And there was not an open kind of exchange of information and ideas going across those political communities. So we have a real risk here of creating these kind of bubbles that we live in that are just tailored to our own world views. That's something I think we need to move back. We need to use education to create, again, an open public forum, public comments, in which we have a true sharing of ideas and debate of ideas.

MR. BUSKIRK: Okay. Toshi, what do you see as being risks and impediments and the stuff that's a, you know, keeps you up at night question?

MR. NAKAMURA: I think there's no doubt this mobile phone technology will spread very rapidly and soon it's going to cover the entire planet. But in the context of what we do in asking questions and getting feedback from especially the poorest, there's this cultural element of, you know, women not considered to be -- women are not encouraged to speak out in the communities. And these kind of culture constraints, I think that will continue. And then even with the spread of technology we need to be really mindful about these kind of constraints that they face in expressing their own opinion about, you know, what kind of assistance and activities has been effective in reducing the challenges in their own communities. You know, technologies may be there, but there will be some cultural constraints.

MR. BUSKIRK: And Eric, what do you think?

MR. TYLER: Yeah. One of the things that I think was disconcerting about the ITU's convening was that there was a lack of transparency and I think one of the reasons why Google came out and said these conversations are happening behind

closed doors. And I think it largely speaks to, you know, ITU has amazing data on their website. Some of it is behind kind of walls and it's hard to access, but it speaks to the opportunity that the ITU could have in serving this area, which is, you know, opening up some of the ICT data and mobile phone penetration data that it has on countries around the world. If it played more of that role to increase transparency through open data, I think it would kind of better suit itself in being kind of a leading force. And I hope that it kind of turns its focus and adapts a lot of its focus into that more of an open platform system that we were talking about before.

MR. BUSKIRK: Okay. Well, I promised that we'd have plenty of time for questions from the audience, so who out there would like to ask a question of any or all of our panelists? Do we have any volunteers?

At the back of the room, please introduce yourself and say where you're from.

MR. BASISTA: Yeah, Chou-Chin Basista. Tom, instead of the school asking the student to put the iPhone in the locker, how could the school utilize the iPhone as a teaching tool and further improve the education? Thank you.

MR. CARROLL: Thank you. So if we get those phones out of the lockers and let's say -- we're in Maryland. Our organization is working in Maryland right now on water quality issues. Water quality affects the quality of water in the Chesapeake Bay. We'd like -- right now we're starting to connect our students in those learning studios, we call them, with students in New Hampshire who are also working on water quality. Toshi just talked about water as an issue in emerging markets around the world, okay? Water will be a huge issue everywhere. Water will be the biggest economic issue really going forward. And this morning one of the other panel members talked about women needing to have real-time access to water and water quality. So if we took all those devices out of the lockers and we took down those firewalls, students in Maryland

working on water quality and students in Kenya working on water quality and students in New Hampshire on water quality could be sharing information.

And our students are working with NASA Earth Science engineers and scientists who have a lot of knowledge about how to do this. They could be working with Google Earth to look at each other's environments. You can upload pictures of your environment into Google Earth and share. So, again, it's a question of recognizing that we are in now one open learning ecosystem outside of these institutions and turning those institutions to take advantage of the power of connecting to that ecosystem instead of assuming that all the learning is going to happen in a classroom from a textbook, from a teacher, within the bounds of that building.

MR. BUSKIRK: Let's start out there and then we'll go over to -- so start out with the fellow in the third row there. Wait for the microphone.

MR. ESTRADA: George Estrada from the Center for American Progress. Toshi brought up a point about culture and I think that one of the things that I hear that was missing across the board in every single panel is the power and the impact of culture. I mean, overall culture tends to be even more powerful than institutions.

And I think that to your point about schools taking the devices away, yeah, that's one part of it, but there's also the being able to have certain restraint and how the technology's being used. You know, we tend to look at it, as many of us I presume are technocrats and technologists in our own sense, and, you know, we tend to use these devices, to some extent, responsibly. But at the same time, there's a flip side that there's a maturity that comes in because technology's advancing so fast that, you know, when I go back to where I grew up in the inner city in New York, a lot of kids have a lot of technology, but they're not even aware of the power. All they know is that I could use Facebook, I could Tweet. And so culture is very different.

And I think that even the conversation at the U.N., you know, there's a

lack of transparency, which inherently is one of the things that technologists over here, at least in Silicon Valley, have always pushed for. So what you're really hearing is more an argument of cultures clashing with each other because the technology's moving regardless of whether the culture wants to move or not.

You know, I read recently that there was some regimes that were trying to use RFID tags to follow women and know where they are. You know, so how do we balance that? How do we balance those traditions that we hold very dearly as technologists, you know, against the inherent, you know, strong traditions that are trying to cope with -- a lot of cultures, including in the U.S., are still trying to cope with the 20th century and we're already well into the 21st. So, I mean, how do we address cultural differences?

MR. CARROLL: Well, I'm a cultural anthropologist, so I'll answer the question about culture, okay. So some of what's being talked about, and I think some of what the panelists just talked about, we were calling it the digital divide maybe 10 years ago. And the digital divide was about how has technology and who does not have. You know, it's the haves and have-nots. So if you have this technology you can do all kinds of things. If you just don't have the hardware, you don't have the technology, you're on the wrong side of the divide as far as information access goes. We're pretty quickly moving, especially with mobile devices and smart phones, to where the divide is not about hardware anymore and we're getting back to some of the deeper divides that are in our cultures, divides that have to do with gender equity, racial equity, ethnic divides, handicap divides.

So I think that, you know, we're also getting back to, you know, an old axiom, you know, knowledge is power. Who can control the knowledge with these things? That's a big control issue. Okay. So that, without trying to sound Pollyanna here, though, I think that the fact that we can now put this power in people's hands, the

issue now is not whether they've got the device, but how they use the device and what we do to empower them to use the device for their own good, for their own growth. So with women in developing countries, I think one of the panelists this morning was talking about using these mobile devices to empower women entrepreneurs. In low-income communities we can use these devices to put much more powerful learning resources in people's hands than they can actually get in their neighborhood school. We may find that we need to work with community organizations, museums, libraries during the transition to empower them to use that effectively.

MR. TYLER: And I think on this, I think you're absolutely right when it comes to this idea of needing to take into account the local cultures and just be -- when it comes to your approaches. And one of the research focuses that I have is around mobile banking. And I've traveled to Kenya, the Philippines, and India to kind of look at the local intricacies that have, you know, made Kenya a success, but when you replicate that same model and put it in another country, like Nigeria, why that's failed. And I think a lot of it has to do with these local cultural issues.

And I think one of the promising trends that we're seeing is a shift towards user-focused design. So let's start with -- and it speaks to a wide range of approaches that were mentioned in the first panel, but let's start with the user. What are their needs? What's the system and culture that they're operating with? And then let's take the steps from there and try to weave in, where there are problems and information needs, weave in technology. But let's not start with the technology first.

MR. NAKAMURA: So we are a technology marketplace and so we're dealing with a lot of technologies which are beyond the mobile technologies, so take the example of a clean cook stove. At the moment, a majority of the families in developing countries they are cooking using the firewood. The combustion is inefficient, there's a lot of harmful smoke which is killing over 100 million people, 1.2 million people every year.

And so identified a very fuel-efficient clean cook stove which doesn't produce smoke and that doesn't require as much firewood, so that reduces the women's time in collecting firewood. So we are bringing these very fuel-efficient stoves to different communities and then we realized that in order to use that particular stove women had to chop the wood into smaller pieces, so that would actually increase the time for women in cooking rather than reducing the time. And chopping of wood was the males' job, so women were basically -- it was a whole complete -- you know, the woman was able to do everything, but chopping of wood, this is a new required action brought into play. And then they had to convince their husband and then the husband sometimes says yes, sometimes says no. And if they don't agree, they stopped using the technology and then the adoption rate was low. And, you know, we shared this story to the technology company and then they actually modified the design so that women do not have to chop the wood anymore, and then the adoption rate went up pretty high.

So I think that the point is there is a cultural constraint in spreading the technologies, but we should focus on not changing people's behavior, but changing the technologies so that they can fit within the different cultural contexts.

MR. BUSKIRK: Okay. I think there was a question -- actually there was a question back there that was in the queue, so we have time for one or two more questions. So please introduce yourself and say where you're from.

MR. PENCE: Sure. Eliot Pence with the Whitaker Group. We advise companies investing primarily in Sub-Saharan Africa actually. My question is about corruption and the extent to which mobile technology can be leveraged to reduce corruption or increase compliance in some of these sort of opaque markets.

You had mentioned, Tom, the absence, the deinstitutionalization capacity of mobile technology. One of the challenges some of our clients have is that in a lot of the markets that they're participating in, there is an absence of institutions

altogether. So I wonder how can M technology or mobile technology reduce crutch and increase compliance in the absence of a sort of institutionalized market?

MR. TYLER: Others can jump in when they see fit, but one of the -- you know, you were mentioning that you work in Sub-Saharan Africa, and one of the interesting models that we've seen is a service that's called I Paid a Bribe that's operating in Kenya. And what it does is it takes this problem that isn't being addressed around corruption issues and not being enforced and it disperses it through mobile technologies at the grass-root level. And it tries to identify it and, again, increase transparency around different areas where this is being addressed. And this is just one model. And I think on the second panel more kind of anti-corruption measures were being talked about and there definitely are challenges around it. But I think it speaks to this ability to have more people part of the discussion and identifying different areas where corruption exists, but that's one place where I think there's a good starting point.

MR. BUSKIRK: Did anybody else -- Tom?

MR. CARROLL: I just wanted to say one -- I worked in Basutu for two years in the '60s in the Peace Corps, so I think that when we don't see institutions, it doesn't mean that they're not there. Okay?

MR. PENCE: Sort of informal.

MR. CARROLL: There are informal institutions and informal systems, and going back to these cultural patterns, to the point where the notion that what we're seeing as corruption is not corruption. What we're seeing as corruption is the operating business model. Okay? And so when you come back to transparency these technologies are real game-changers. They really do disrupt that business model because things are now public that were never public before. And they actually do have the power to change that environment and pretty quickly when things become public. It's kind of messy, but it can happen quickly.

MR. BUSKIRK: Okay. So we're winding down to the very end, but I think we have time for maybe one more question. Oh, go ahead, you can ask the fellow in the --

MR. ALTMAN: I'm Fred Altman again. And all the talk has been about the positive effects of the mobile technology, but like any technology you can do bad things with it or good things. It's just a technology for doing things. And what are your perceptions of some of the adverse things that could happen with the mobile technology?

MR. BUSKIRK: Does somebody want to maybe give us a minute or two on that?

MR. TYLER: I'll just quickly -- I mean, that's right, that notion that it amplifies a user's intent in many situations and the beginning user can have good intentions or it can have bad intentions. And I think one of the things that Chris Spence was mentioning in his panel was that you can -- especially as you start to look at some of the good side of technology there is a kind of darker side. And Evgeny Morozov touches a lot about this in his book on *Net Delusion*. But I think overall it kind of comes back how do you change the user intent? And that's kind of a problem that no technology will be able to solve necessarily, but you kind of hope that the notions and the support for some of the good users are there, and I think that will be kind of a trend that we see.

MR. CARROLL: So I hear what you're saying, also. And I think that I have no idea what goes on inside of this little piece of plastic. And, you know, it can be magic as far as I know, okay? Because there's two cameras, there's four radios, there's, you know, more computing power here than what we've ever hard, okay? So we start to think about these things as magic and that if we just kind of sprinkle them like magic pixie dust across the landscape wonderful things will happen.

I think this morning Sonal may have been the person who was saying what these really are is they're amplifiers. They make things happen faster, they make

things happen bigger. So they can make good things happen faster and good things happen bigger, they can make bad things happen faster and bigger. They can be used in schools for bullying in ways that we never imagined before. They can be used to circulate, you know, malicious misinformation campaigns.

So it's not the technology that's good or bad. It's the way it's used to amplify things that were already there and potentials that were already there, and it just kind of redoubles the need for us to be more vigorous, more vigilant in pushing it towards the good.

MR. BUSKIRK: Toshi, did you want to comment? You haven't had a chance to weigh in for a little bit.

MR. NAKAMURA: Yes. I think one immediate thing that you people will notice in the developing countries is the amount of waste, the plastics everywhere. And I think the spread of mobile phones and then once it's used, how do you manage this waste? It's a real challenge. And then it took us, the rich countries, many years to develop this, you know, recycling system, et cetera. And it's not really catching up with the speed of the spread of the technology and I think that will remain a challenge.

MR. BUSKIRK: Okay. Well, I think we're pretty much at the end of our hour. I kind of have the feeling that you could probably do this panel -- you're going to be able to do this panel again and again and again. Things are going to keep changing and the problems are going to grow. And, you know, we didn't really even get into the stuff that I know about, which is like regulation and some of the other impediments, like spectrum, for example.

So to close the morning out do you want to have the closing remarks? If you're confused, you won't be when Darrell's finished.

MR. WEST: Okay. Thank you very much. First of all, I want to thank Howard, Eric, Tom, and Toshi for sharing your views with us. Thank you. (Applause)

And I just want to remind you this is a three-year effort on our Mobile Economy Project, so those of you interested in more work in terms of our papers, past events, some of the things we're planning to do in the future, you can go to brookings.edu, look for the Mobile Economy Project, and there's lots of information.

So thank you very much for coming out. We really appreciate it.

(Applause)

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