

BRIDGING THE DIGITAL DIVIDE

DEAN JEFFREY S. LEHMAN: We're going to go without a break so if the next panel could just come right up and we'll move right along, thank you.

MIKE TRAUOGOTT: Bridging the Digital Divide. My name is Mike Traugott. I'm the chair of the Communications Studies Department at the University of Michigan, and it's a pleasure for me to be here to moderate this session. The digital divide is an important concept that is commonly invoked to describe the differential access that people have to technology or the differential skills or ability to use this technology effectively. In my own area of research involving the study of campaigns and elections there's currently a great deal of interest in electoral reform especially in the use of computers for voting. Here, the digital divide becomes a serious issue that's linked to ballot access and ultimately to the representational function of government.

We have a very interesting panel this morning to discuss this particular issue and to comment on the presentation by our featured speaker. Let me tell you what our plan is for the conduct of this session. I'm going to introduce everyone first and I'm going to start by introducing the discussants in the order in which they will make their presentation. Then I'm going to introduce our primary presenter, Steve Gorosh. Then I'm going to get off the podium and the panelists, the discussants are going to slide slightly to the right so that Steve can make use of a PowerPoint presentation and then they're going to come back up in the order in which they're going to present and then to give their comments. We're going to see whether or not we can do this with 30 minutes allocated to Steve and then 10 minutes to each of the discussants so that we'll have plenty of time available for your questions and for them to respond to them.

So let me begin by introducing, as I said, the discussants in the order in which they will present. The first is Russell Neuman who is a professor at the Annenberg School at the University of Pennsylvania and is also a visiting professor of Communications Studies at the University of Michigan. He's held several academic appointments in his career including at Yale, MIT, Tufts and at Harvard. His main research interests follow two paths political communication and communication technology and public policy. He's the author of the *Gordian Knot: Political Gridlock on the Information Highway*, published by the MIT press in 1997.

The second presenter will be Jim Fishkin who is the director of the Deliberative Polls and who holds the Darryl K. Royal Regents chair at the University of Texas at Austin where he is also the chair of the

Department of Government. His most recent book, *The Voice of the People*, presents the full case for Deliberative Polling. Jim has been a Guggenheim Fellow, a Fellow for the Center for Advance Study in Behavioral Sciences at Stanford, a Fellow of the Woodrow Wilson International Center for Scholars at the Smithsonian Institution and a visiting Fellow Commoner at Trinity College in Cambridge.

Our third discussant will be Paul Resnick who is an associate professor at the University of Michigan School of Information. Paul has previously worked as a researcher at AT&T Labs and AT&T Bell Labs, and as an assistant professor at the MIT Sloan School of Management. Paul's research focuses on sociotechnical capital, productive social relations that are enabled by the ongoing use of information and communication technology. His current projects include analyzing and designing reputation systems that help maintain trust among strangers online and using photo directories and email lists to increase social ties in neighborhoods.

We're very pleased that our speaker this morning is Steven Gorosh, the former Executive Vice President, General Counsel and a founder of NorthPoint Communications. Steve has over 15 years of communications law experience in industry, government and private practice. He graduated cum laude from the University of Michigan Law School in 1985 and began his legal career at Crowell and Moring in Washington, D.C. where he practiced communications law and litigation. He also spent three years at the Federal Communications Commission Common Carrier and General Counsel's Bureau working on a number of key policy initiatives with federal and state regulators throughout the country.

Steve has held a number of corporate positions with Bay Area companies. In June 1997, he was one of the five founders of NorthPoint Communications, a pioneer in providing digital subscriber line or DSL service. He has led the successful fight to establish a myriad of regulatory protections to spur the development of a vital competitive carrier industry for DSL and negotiated many of the industry's first DSL interconnection agreements. In addition, he established NorthPoint's digital divide program, the NorthPoint Community Connectivity Initiative, which offers free DSL service to more than 600 HUD low-income community housing developments nationwide. Please join me in welcoming Steve Gorosh.

STEVEN GOROSH: Thank you for the introduction. Thank you Dean Lehman and the organizers of this event who were kind enough to invite me. I was born in the Detroit area, grew up and went to undergrad and law school here. The last time I was in this room I was on the other side of the lectern as a young and somewhat intimidated law school

student and I'm fighting this somewhat irresistible urge to begin firing out intimidating questions to people in the audience. But I will try to repress that and talk about the topic, which is truly an interesting one, and one that I think will continue to capture our attention as we move further along the information age.

The Digital Divide is a newish concept for a relatively new technological phenomena and there's not a clear or specific definition that's associated with the divide. In it's broadest sense, what links the discussions and the literature on the topic, is the sense that there are technological "haves" and "have-nots." But what people specifically mean in access to technology has differed over time, and I think will differ as the technological opportunities increase.

The Digital Divide used to refer to access to a computer. At this time, increasingly people are talking about a combination of computer access and Internet access in the form of narrowband, i.e., dial up access (under 200 kb (kilobytes) speed), in which you can access the Internet and the capabilities that that unleashes. But already we're seeing, for instance at the FCC, talk about the divide in terms of computers plus broadband Internet access, that is, those technologies like DSL and cable modem, so called broadband, above 200-kb technologies. And I'm sure if I was here in a few years there'd be two or three new additions to the list because the technology will continue to improve over time.

So the big question that we begin with is: Is there a Digital Divide? I'm going to show a few slides with data from the National Telecommunications Information Association, that's housed in the Department of Commerce. It's the administration's telecommunications group. The FCC has also looked at Internet access, and there was also a study released just a few weeks ago from the General Accounting Office. The data is somewhat similar.

The data consistently shows that income and education levels are a dramatic predictor of Internet access. And as we'll see in the ensuing graphs, race or ethnic heritage and also disability status are also indicators.

First of all, though, before we talk about the remaining gaps, it's very important in this area to talk about the progress in closing certain gaps. I remember when we had started NorthPoint three or four years ago, I would go to regulatory forums and there would be a lot of discussion regarding what we were doing for the divide, and we hadn't yet deployed any equipment or connected a single customer. And I always thought how the early computer manufacturers would have felt 20 years ago if someone said to them, "Why aren't you providing computers to low-income areas?" And they'd say, "Well, give me a

chance to build a business before you expect ubiquity.” And the good news here, is that there has been a dramatic increase in the connectivity of Americans to new technology over time. Just over half of the nation’s households now have computers. This is double the rate only five years ago. Again, as I mentioned, it took 20 to 30 years for the PC revolution.

By contrast, narrowband Internet access is growing at truly a remarkable pace. I think Donn from AOL mentioned it. In the last four or five years, half of Americans already have Internet access, and that itself is up 58 percent from a previous 17-month period. If you compare, as Donn suggested, some of the historical deployment of key technologies from the color TV to the radio, this represents unprecedented growth. So some people are skeptical of the concept of a digital divide, because they say, “This glass is more than half full, let the market do it’s magic, before you begin with government controls.”

NTIA pegs high-speed broadband access at 4 percent (it’s one-tenth of dialup access). GAO (United States General Accounting Office) sees it at 12 percent. I assume it’s somewhere in the middle. It’s a very new phenomena and the technical network isn’t even very well developed to service a lot of Americans.

In talking about the divide, or more accurately as some people call it, the “divides,” there’s actually a number of different demographic material we can look at. One interesting thing is that on a geographical basis, or depending on what type of community you live in, the divide is not that great. A remarkable amount of discussion about the divide has been led by some of the rural legislators talking about the gap between urban and rural. At least if you’re looking at narrowband access, you don’t see much of a divide. On the left is the U.S. average, for internet access, about 41.5 percent of households; urban areas are slightly higher, rural areas have almost caught up. You will see that on most of these graphs. So the gap has narrowed on rural, which is good. Now central cities lag, but not by that much.

It starts getting interesting when you start considering racial or ethnic factors. And here we’re looking at black and Hispanic access rates compared to white and Asian-American access rates, and as you can see on the left, white Americans have an access rate of 46 percent. It goes up as high as 57 percent for Asian-Americans. But blacks and Hispanics which are the second and fourth ones, respectively, are stuck around 23.5 percent and 23.6 percent. They have actually been growing at a faster rate, but only because they’re building on a smaller base. So the gap has actually been slightly increasing since the last period.

Where the dramatic differences come in is when you begin considering income levels. And here it shows various income levels. The

far right, the larger bars, are for households earning more than \$75,000/year, and the graph on the far left is the lowest income level, under \$15,000. And you can see a pretty straight progression. In fact you have access rates above three-quarters for American households earning above \$75,000 and you have access rates down to 13 percent for households earning under \$15,000. And, in fact, there's even a further disparity if you combine income and some of the racial and ethnic characteristics. So now a divide, I think, arguably is a gulf, where Asian-Americans earning more than \$75,000 have Internet connectivity of above 80 percent and black and Hispanics in the lowest income level are stuck below 5 percent. So I think the evidence is compelling.

I think the question becomes should we care? And I think there are a lot of persuasive arguments for why we should care.

Two arguments I tend to see or hear most often with regard to differing access rates have an economic basis. The first one deals with individuals. It's this idea that we already have individuals in an under-class of sorts and that the technological break-throughs of the information age and the Internet will increasingly be the currency of success. And if you take this disadvantaged community and you deprive them of the only tools that they can use to really be successful, then you will be reinforcing the existing disparities in the country, which is obviously a very troubling concept. A variant of this concern is a broad economic development concern which basically says access-deprived areas, such as certain central cities, will never achieve economic success because, in the absence of skilled workers, jobs and industries will stay out. Alan Greenspan has been continually quoted over the last few years as attributing the remarkable economic success of the country over the last decade primarily to the increased productivity associated with the new information age. If we have a group that cannot participate in the new economy, then the current disparities worsen over time.

Another argument that you see advanced is the same argument that was advanced in favor of "Universal Service" in telephony voice service. That is, in 1934, when Congress passed the first Telecommunications Act creating the Federal Communications Commission. Language in that Act requiring the Commission to promote the rapid deployment of telephone service for all Americans turned into a "Universal Service" concept. One of the ways the Universal Service was viewed is that by subsidizing voice service or regulating prices in a way that enables economically disadvantaged users to obtain telephone service, you are also helping non-disadvantaged users who will now enjoy more people to talk to. The idea is that all of society is enhanced where all people are on a network which allows them to communicate with each other.

Also, there is an increasing discussion about the idea of the impact on a vigorous democracy where citizens have such disparate access to certain kinds of information. One of the panelists will be focusing on that argument. And there's also an equal access/civil rights theory. A previous administrator of the NTIA called Internet access a civil right and I'm sure we'll hear more of that dialogue as time goes on.

So, we have some disturbing numbers and some implications that are disturbing to the economic future of the country and to certain individuals. So what do we do about this?

I think the first thing you want to do is promote pro-competition policies and let, to some extent, the market do its magic. It's very early in this period to write off the ability of the market to close the gap over time. As I said the so-called rural gap is closed or closing. There used to be a gender gap with computer access. That is now closed. But I very much agree with Joel Klein, who I've worked with in the regulatory arenas, on the idea that even at best the market may make the pie bigger but it doesn't necessarily allocate those resources in society's best interests. And we'll talk about that in a minute.

So the next solution is look to the government to do something. The biggest program that the government has had in this regard is the so-called "E-rate" program for schools and libraries. The E-rate program came about as a result of the 1996 Telecommunications Act, which provided for discounts to schools and libraries in telecommunications services up to 90 percent including funds for high-speed access. Internet access connectivity can be subsidized, whether it's narrowband or broadband service, some of the inside wiring, etc. It's funded through a charge on the telephone bills. There's been a couple of funding rounds, it's meant to be an annual thing, and the rounds are creeping up above \$2 billion a round. However, taxes are very controversial and there has been intense political and legal opposition to this measure. It's been fought vigorously at every stage, it's almost been dead several times, it was almost dead after it started. However, once it got off the ground, some polls recently showed that as much as 85 percent of Americans supported the idea that they would pay a monthly surcharge on their phone bills to ensure additional connectivity in the schools and libraries.

There are other things that the government is doing with targeted subsidies, too. Rural health care for instance. As everyone knows there is a limit to doctors in rural areas and there's even a greater limit of specialists. So you can hook up high-speed broadband, you can move digital and x-ray imagery over the net, and you can provide services in outlying communities that wouldn't be possible. So there are a lot of

little steps. Community grants for particularly successful programs can and should play an important role in moving us along.

Private and non-profit donations and support are of course critical. A lot of companies are donating computers these days, they're providing tech support and training.

I wanted to talk for a second about something that I established at NorthPoint, our community connectivity initiative. We partnered with HUD (Housing & Urban Development). NorthPoint faced at the outset a barrier in the sense that we could put a high-speed access line into somebody's home or school but unless they had a computer, the line wasn't going to do much help. So HUD, it turns out, has 600 community centers with computers to serve the residents. HUD is increasingly obligated to build these in any of their major housing units. However, these computer centers in most cases lacked high-speed access, and they often lacked any Internet access. So it was great for us. We simply added the high-speed access lines. And since the Centers were often in urban areas where we had deployed our service, we could donate as a startup without killing our bottom line. And we leveraged other partner donations.

In fact, one of the most encouraging things I found about helping to narrow the digital divide, is that almost no one says no when asked to help. There is an increasing number of people who believe that the Internet will change the way we live and work over time. And they're excited about this mission and they want to make sure that everyone enjoys it. And it was one of those rare win-win-win situations. Employees felt good about the company, we gave something back to the community, and we received some great PR that you can't purchase. So there are a lot of solutions—even if you don't believe in government subsidies, and there's a lot of ways to move the ball forward in a positive area.

This is one of many slides that we took when we opened these new Computer Centers with new Broadband Internet Access capability. The gentleman in the wheelchair, had a troubled youth. When he was 15 he was on his way to purchase drugs, and had an accident and ended up in the chair. He's been there ever since. He went through a very dark period in his life and ultimately turned himself around. He's now a motivational speaker and he's head of this Tacoma Washington Network Neighborhood Center, which is HUD-subsidized. He has found that despite his positive attitude, his injuries keep him in the house a disturbing amount of time. He's fallen in love with his DSL line because it's sort of enables him to remain connected to the outside world and be a productive member. I didn't show the graph, but frankly the disabled

community has half the Internet access than the American community in general and that's an example of a divide.

Another reason to show the slide is it's easy to get caught up in the numbers, you know, millions of Americans this and that. But at the bottom, it's truly been remarkable to see the effect that these services have on individual people. Whether we go to a low-income community in south central LA or a high-rise old-fashioned development in New York City. When the kids are there; they're laughing, they're learning, they're enjoying themselves. They do educational software, they learn the web. What we found, and what everyone else has found who has been in this area, is that the parents also start getting involved with the computer to help the kids. Suddenly, the parents are gaining skills and then the parents are getting jobs as well. It's just a nice overall experience.

In summary, I think the digital divide clearly exists. The longer it exists, then we run the prospect of these great new tools becoming another measure of holding back and entrenching the disadvantaged members of the society. And the quicker we are able to find whatever combination of mechanisms to help narrow this gap, the country as a whole can leverage these tools to everyone's advantage. And again, if you don't believe in government programs, there's still a lot to do. The Attorney General talked about the lack of connectivity to society. This is another way to get involved. Go volunteer at one of these centers, tutor some kids on Internet stuff. There's an inordinate amount that can be done and it's often a very positive experience. Thank you.

W. RUSSELL NEUMAN: I have only a few minutes so I'll try to focus my remarks on one central idea and it's an idea that I hope will be provocative and stimulate a little bit of a debate among the panelists and among the participants here. And what I wanted to do is to say that the digital divide concept is simplistic and misleading. Unless we dig a little deeper, the kind of throw-computers-at-schools policy response won't help much and may hurt. I agree with Steve's general sense that we need to pay attention to the growth and diffusion of the Internet. But I feel that the digital divide in its simplism tends to focus on the question of whether there's a computer sitting there and not what's done with it. And as a social scientist I wanted to raise some questions about the deeper and longer-term impact of this most amazing technology, the Internet, and emphasize as well the importance of broadband, which I'm sure Steve would agree with.

So what I'm drawing us toward I hope is a broader definition of what access means. And I have three questions about access. Where, what and what for.

You'll notice that there were a couple of different percentages that Steve used from the NTIA report which is access to the Internet which includes at home, at school and at work, or whether there's a computer in the home. By the way, the most recent statistics, the NTIA report is a year old now, coming from the Pew Internet and American Life Project estimates access among Americans at 56 percent and that was released last month. And Nielsen released a report the same week, which indicated their measurements at 60 percent penetration of the Internet. So we're moving past the half, getting towards three-fifths probably but before the end of the year something closer to two-thirds with access that means at home or at school or both. So if you start talking about where you have to understand the difference about what it means when you've got three people waiting behind you or four kids at school watching you as you're using the net. It changes very much the experience, the sense of time and the kinds of things you might do on the net. So I think we need to continue to take a look at the issue of where. And something that will foreshadow a policy concern is increasingly the Internet will be accessed by wireless technologies and understanding that the question of where will increasingly become home, work, school, community access center for people unable to access the Internet otherwise, and a wireless connection with the Internet.

By 'what' I mean 'what kind of connection.' That's the narrowband, broadband distinction. I want to emphasize that broadband is going to be not just a faster Internet it's going to be necessary for the primary functions of the Internet, which will include audio and video. When we study the social impact of the Internet we ask: what's the difference between the Internet and television? Right now there is a difference but five and eight years from now there will be so much video on the Internet that making the distinction between the impact of television, and the Internet will be meaningless. In fact there will be a broadband digital connection to many, many homes and whether you happen to be getting a TCP/IP (Transmission Control Protocol/Internet Protocol) video signal or an analog signal would be something that doesn't matter much to you, they're both high-quality and you're not really sure where the video is coming from or how that little button you pressed in your hand generated the video stream you're watching. So as that becomes clearer and video becomes less of a novelty but a central element of digital communications to the home the 'what' question will become increasingly important and we'll go through this whole cycle again. I'm sure digital divide is too sexy to drop despite my complaints and we'll be talking about the broadband divide.

Point number two, the fundamental issue here, is understanding the underlying characteristics of inequality. If you just throw a computer in front of two people, one person's going to say, "Oh, it's a video game," and another person's going to say, "It's a way for me to learn things and enhance my career." Until we start to understand the sociodynamics of how the web is socially constructed and defined, we're not going to get very far with the inequality motivations that drew our attention to the digital divide in the first place.

The notion of the Matthew Effect, that those who already have will be given more, actually has fundamental supporting mechanisms in the social sciences. The example in the diffusion literature is Pakistani rice growing where if you generate a new, more efficient genetically improved rice crop, the richer Pakistani who had 50 hectares generates twice the income across all 50 hectares and the poor farmer generates twice the income as well using the same rice. But only over two or three hectares. So the relative difference between the rich and the poor gets greater. And until we start to pay attention to the software, substance, availability and training I think we, just counting the numbers of computers in front of people will be misleading. The other element of that Matthew Effect was some early research on Sesame Street where it was found that although many had designed at Children's Television Workshop Sesame Street to help urban kids catch up, it was shown that suburban kids would generate more learning per number of hours of watching Sesame Street than the urban kids would. Generating again this sociodynamics that might increase rather than decrease a gap in learning between two social groups.

Point number three. Once the Internet gets to virtually full penetration in one form or another the question of polarization arises. We have in the print and broadcast world a cultural, political commons. Where what was on TV last night is legitimate discussion around the water cooler and we all pretty much watch the same things. Less the same now that there's cable than when we just had three broadcast networks. But there is still a commons. And even if you don't subscribe to HBO you're supposed to know at least something about the Sopranos. On the Internet the dynamics of this reinforcement of the bandwidth constraint of television disappears. And an African-American who uses the Internet may see a completely different and non-overlapping cultural Internet than suburban white kids might see. And until we understand where people go and how they define the Internet I think we won't fully understand the issue of divide, inequality, polarization and fragmentation that this technology challenges us with.

Given a broader definition of the digital divide, what kinds of policy would you promote? And the first question, the e-rate and the TOP program of the NTIA and the department of education's community access center funding all have the same character and Steve's company's funding, which is you throw a little technology into a place that might not have otherwise had it, you increase the diffusion, and I've got no beef with that approach. My only question is whether that's enough? And it needs to be supported with training and there's a whole other area where public sector and non-profit sector people could start investing which is generating content on the net, which would draw Hispanic and other communities into the net world. If computers, because of the miracle of the marketplace, get really cheap the penetration of the Internet starts to look like the penetration of radio or television or even telephone. Telephone penetration is 93 percent, television is 99 percent. The question is: will there be sufficient resources there for education? The marketplace will generate a lot of e-commerce and a fair amount of entertainment. But it may be up to non-profit and public sector enterprises to generate an educational component that would not otherwise be there.

JAMES S. FISHKIN: I was charged with the task of raising a somewhat broader set of questions. Basically, what can the Internet do for democracy and this fits in the sense that my concern is how could we somehow incorporate everyone meaningfully in the democratic processes. So obviously this is relevant to the digital divide. And also some of my speculations are key to the kind of prognosis that Russ just offered about how the Internet is going to be involved much more in video and audio and the convergence between television and the Internet. Now with that said, I'm also going to approach this question from the perspective of a distinctive set of experiments that I've been involved with for a number of years called Deliberative Polling, which basically attempt to assess what the public would think if it were really engaged seriously to think about questions rather than offer top-of-the-head impressions of sound bytes. I've done this kind of thing using two older technologies, that is, television and public opinion polling combined in a distinctive way. We've done about 19 of these projects on television in various countries around the world and I will come back to that because it offers a vision of one thing that might be more easily realizable on the Internet. But let me first put this problem, since I've only got a short time I'm going to capsulize this, not with a fancy PowerPoint presentation, but a little chart of six forms of public consultation that could be implemented (and indeed some are implemented) on the Internet. I'll explain this rather strange-looking

chart. I was embarrassed at the sophistication of all the PowerPoint presentations and this is just taken from a paper that I wrote. But consider two things. *What* kind of public opinion is involved in some kind of democratic consultation? That's one. And two, *whose* opinions are being consulted? That is, how are the people being selected? For the "what" dimension we can take public opinion as it is or when I say "refined" I'm really using a kind of Madisonian language that representatives for example "refine and enlarge the public views by passing through a chosen body of citizens." Suppose people went through some process where they were exposed to competing points of view and they really thought about an issue and they could get their questions answered and they could discuss it with other people. That's the "refinement" process of deliberation. So we have top of the head opinion or raw opinion and deliberate opinion or refined opinion, two kinds of opinion and three kinds of selection. Self-selection, random sampling or somehow everybody. Now, one of the main forms of democracy now found on the Internet fostered by media organizations all over the world are what my colleague who I've worked with, Norman Bradburn, at the University of Chicago, called SLOPS, "Self Selected Listener Opinion Polls." They're everywhere; newspapers have them.

People vote on the Internet for various things and these enter the public dialogue. But there's a problem with SLOPS, self-selected people, the more intensely interested, sometimes organized, put themselves forward. TIME magazine had a world consultation involving SLOPS for the person of the century. And they wanted to know who the greatest thinker of the century was, (this is the 20th century), the greatest thinker, the greatest entrepreneur, the greatest entertainer. And for some reason in one press report I could never figure out, the best dresser. And it turned out the same person was voted by millions of votes ahead of everybody else who was simultaneously the greatest thinker, the greatest leader, the greatest entertainer and the best dresser. And it turned out to be, you'd never guess who it was, before they cancelled this part of the competition, it was Ataturk. Because the Turkish people mobilized as a matter of national pride and millions of school children over and over were voting. Ataturk greatest thinker, yeah, best dresser, yeah, greatest entertainer. And so the people of Greece decided that this was not appropriate so they mobilized behind Winston Churchill who was the next, the only person who could catch Ataturk and it still fell short by millions of votes. There were some articles in the British press about how this had turned out and then the world consultation was cancelled. But this shows that if you just allow for public voting, public consultation you're going to get something.

You may think you're getting grassroots but you may actually be getting something more synthetic, which Washington lobbyists call Astroturf. The same conclusion came from Internet polls that showed Alan Keyes as the leading presidential candidate because they were organized groups. So that's the problem with SLOPS.

Now we can have discussion groups on the Internet. Those are self-selected groups and very often involve people who are like-minded and the rest. In any case they don't represent, I'm interested in something that will represent everyone under conditions where they can think. Now, of course, we have public opinion polls; they represent everyone but not under conditions where people are necessarily motivated to think. Very often top-of-the-head opinion. In fact as you know many of the opinions, there's a lot of evidence about how the public is not well-informed and may even be offering what Converse here at this university famously termed "non-attitudes," or basically non-existent opinions in response to questions when people never like to say they "don't know." So they pick one of the alternatives and it may represent very top-of-the-head thought or maybe no thought at all. You know the famous study of the public affairs act of 1975 where people offered responses but it was fictional. Then the Washington Post celebrated the "20th unanniversary" of the non-existent public affairs act of 1975 by asking people what they thought of the repeal. Half the people were told the Republican Congress wanted it repealed and half were told Clinton wanted the repeal of this act. Depending on the way the question was worded they got entirely different views. But it never existed in the first place.

Of course some of the opinions offered in polls represent well-formed opinion, some of them at least opinions that are top-of-the-head and sometimes non-opinions that don't exist at all. So I became concerned with the question what would the public think if it really had a good chance, if it really had a good chance to think about it? So in this process I call Deliberative Polling we take a national random sample of the public, we give them a survey and then we transport them face-to-face physically to a single place. We pay them, we give them a free trip, we tell them they're going to be on national television, three, four, five hundred people. We just did this two weeks ago in Australia on a national level, we did it in Denmark before the referendum on Euro, we did it last year in Australia, we have one in Canada now going on environmental issues. We've done 19 of these. We did one on PBS in January of 1996 hosted by Jim Lehrer with presidential candidates, it was called the National Issues Convention, broadcast on PBS from Austin, Texas.

Now, these people come together face-to-face. In effect we put the whole country in one room. They come to a great deal of additional information and mutual understanding and we've shown their opinions change sometimes quite dramatically. It's a representation of more informed public opinion. Sometimes the changes are perfectly explicable and rational. It's amazing what the public comes in with. They came into the National Issues Convention wanting to get rid of foreign aid as in other polls at the time, but also thinking that foreign aid was one of the biggest parts of the U.S. budget. When they discovered that foreign aid was less than 1 percent of the budget they didn't want to get rid of it anymore. Even though one of the presidential candidates who didn't come was Pat Buchanan who was running around at the time saying, "Balance the budget, get rid of foreign aid." If he had come to our event as most of the other candidates did, this informed microcosm of the public could have told him, "You can't say that, it doesn't make any sense." When we did the National Issues Convention we had to have an official airline, American Airlines, to fly everyone in. Well, if we did this on the Internet, we wouldn't need an official airline. But we'd have to keep people's attention. One of the problems now is the Internet is text-based, a lot of the connections are slow. To do it right we'd have to give people computers who didn't have computers to get over the digital divide. But, more importantly, we'd also have to have serious discussion, it's not just information it's some degree of mutual understanding and discussion. So the fact that, eventually, someday, the Internet will involve high-speed connections with video where we could have serious small-group discussions and large-group discussions is a vision of democratic possibilities.

Now, the Deliberative Poll has its limitations. It's only a microcosm. It's only a quasi-experiment that shows what the public would think if it had a chance to think about it and were motivated to do so. Well it would be much better to get the whole public thinking or the whole public involved.

The last two categories aspire to include everyone. Referendum democracy in theory involves everybody but similarly has the same problem as the public opinion poll in that we're not necessarily motivating people to become informed. They become a little bit more informed, there's some material available and indeed we've done two Deliberative Polls before national referendums, one in Denmark and one in Australia, where we then disseminated the materials, disseminated the broadcast. And the Deliberative Poll is something that provides cues for other voters. But it is also the case that the public doesn't get very well informed. Even in Australia where they have compulsory voting it's

clear the mass public that was voting on the referendum held last year was not well informed or any more informed than publics in other such cases. Even though they all had to vote or pay a fine.

Bruce Ackerman and I have a manuscript, a book in the works, for something called "Deliberation Day," which is available on a website that we have. But the book, when it's done, offers a "realistically utopian proposal." Enormously expensive proposal, preposterously expensive proposal but a way that you could think through how with a national holiday and a lot of expense you might get "everybody" deliberating in a way like the microcosm does in the Deliberative Poll. And how that might completely alter the public discussion.

Right now one of the problems with the Internet is people don't like to stay on it very long. The people doing Intersurvey with polls online, they have trouble getting the people to stay on. It's like people with attention deficit disorder in a public dialogue where people are exchanging messages worthy of fortune cookies. But if we can get people actually engaged seriously maybe with video and interpersonal dialogue it may be possible to more greatly engage the entire mass public, that's the goal. But in the mean time processes that might engage a statistical microcosm of the public under conditions where they can get good information, which is the Deliberative Polling model, could usefully be adopted. In the mean time, until the issue of the digital divide is solved, I'm probably going to have to do Deliberative Polls with the old-fashioned technologies of television and random sampling via telephone to recruit the sample. But eventually, we could do national public consultations on the Internet.

Anyway, these are six democratic possibilities. Some of them take off all by themselves. There are all kinds of discussion groups on the Internet that help people get information but they don't represent the entire country under conditions where it can think. The SLOPS just proliferate because media organizations love them in order to get people to come to their website and to feel some sense of participation. But they give a distorted picture of public opinion and a distorted picture of public dialogue. In fact I think they're a disservice to democracy and indeed the fight against SLOPS had almost been won until the Internet came along. And then they just proliferate. Everyone talks about how "more democracy" is a great thing. We need to think about *what kind* of democracy we want to implement. These six possibilities differentiate different kinds of institutions that could be implemented and I think that only some of them are especially worthy. I'll wrap it up at that point. Thank you.

PAUL J. RESNICK: So I want to comment mostly on the digital divide issues and I'm going to tie it in a little bit with some of these deliberative democracy questions. So inequality in general in our society is rampant by income, education, racial divides. But we do tolerate inequalities of some kinds in our society. So I think if we're going to make an argument that this digital divide is an important public problem that needs to be remedied more so than just the general kind of inequality, it's going to be helpful to be more clear about why we think that this particular kind of inequality is more important than some others. And I think the, I actually think that it is. And the reason is compounding of privilege or what Russ called the Matthew Effect. The claim is that being on the right side of the digital divide is a matter of your productive ability not just your consumption. That if you are on the right side of this you'll be able to learn, to earn and to influence. It's a matter of wisdom, wealth and power. And if that's the case, then if you're on the wrong side then you're going to be more and more disadvantaged as your life goes on. And we do have an important principle of equal opportunity in our society and hence, this is something we should care about.

If that's the basis of the argument I think we have to be clear about what it is that people are going to do with their access to the Internet once they have it and why it is that it's going to give them the ability to learn, to earn and to influence. And what skills they're going to have to have. Russ talked about you get the computer access and then what? I don't think it's sufficient, it's certainly a barrier. If you don't have it you're not going to be able to do these things. But merely having access doesn't mean that you'll be able to take advantage of these opportunities to learn, earn and influence. I'm going to suggest what I think are some of the primary or the fundamental skills that are going to be needed in order to be able to take advantage of those opportunities.

A baseline for these is regular literacy. If you wanted to be a powerful person in our society and be able to do well economically, for the most part you've had to be able to read and write. And I think the barrier is just raised because you're going to have to have some information literacy or information fluency in addition to regular literacy. I'll call it fluency with information flows. The basics of that is being able to find information. It used to be that information was power but now everybody can get everything except you can't find anything. There are very important skills that I think have to be part of the basic education process on how do you search for things, how do you know if you're making progress towards what you're looking for, how do you get stuff. So that's on the receiving end.

And then there's the other direction, the information-organizing skills. How do you organize information so that other people will be able to get to it? People are going to pay for that in various ways and that's one way that you're going to be influential. So I think those are kind of the basics and pretty clear. I'm going to propose two others that I haven't quite worked out as well for myself yet so maybe I haven't quite gotten them.

I think a third fundamental skill is something I'll call peripheral participation. The ability to spend a little bit of time in monitoring some social groupings, some content areas without being fully immersed, and yet being able to take something out of that group. So in some sense it's an ability to cross boundaries to be a little bit part of some groups or a little bit paying attention to certain kinds of information. I think that's going to be an increasingly important skill.

And the last one is convening. I think being able to use this medium as a place to bring people together, especially if you're going to try to be influential, that's going to be important. Jim doesn't like the online discussion groups as a reflection of the general population but they are a pretty good means of having influence. And that, of course, is what Seiger does, kind of organize people online so that they can be influential. So those are the four things; information finding and search skills, information organizing, peripheral participation, and the ability to convene and build community through these information technologies.

In some sense the argument is that the fundamental skills are about communication and not so much about content. And as we look at what's most critical to enable in terms of uses of the Internet it's going to be things around communication more than around content. So I'm not that worried if there's some cable channels that people won't be able to get to but I'm very worried if they can't participate in the next round of the Deliberative Polls.

So when that turns us to remedies, one thing it suggests is we should probably be thinking of ways to subsidize uses and not general access. If you subsidize general access we're going to be subsidizing a lot of entertainment things and I think there's not such a good argument for public investment in that. Second, we should focus on this education especially on the key things of information fluency. I took my stab at what those four things are. Certainly we need research to establish whether those are really the right four. But we should articulate what it is we want to educate people about. I don't think it's word processing. I think it's some more fundamental skills. And the third thing I'd like to suggest in the realm of remedies is that we should think about public and communal activities not just things that people will do at home.

We've heard the horror stories of the computer labs that have been set up that no one's using. But there are also some really great things that are happening in public spaces. I see Mike Tenbusch is here from Think Detroit and he's got one of these community technology centers and kids are engaged in communal activities. They're learning stuff but they're also doing things together. I think it's important that we maintain this idea that if we're going to have some public investment it might want to be in these communal spaces not just in things that people would do at home.

I want to be controversial on a couple of things. I'm skeptical on broadband. I am convinced that it's crucial for everyone to have access to some kind of Internet access in order to participate in things; I'm not convinced that broadband is so critical. I do think that always on access is important: if it takes five minutes to get on versus being able to just flip something on. I think that's going to matter. I'm not convinced that you need to be able to get streaming video in order to make good use of the things. Research has been done in the field of computer-supported cooperative work with teams trying to do work together, you have people do various tasks and you try it with having a video connection or you just have an audio connection and it doesn't matter. The video doesn't help except the only studies they showed that it matters was where you have people from different countries where you had language barriers then video seemed to make a difference. So I don't think that video is going to turn out to be critical. In the distance learning things, having my face on the screen turns out not to be very crucial. Everything's moving towards you see my slides and we have various texts going back and forth and maybe pictures but the actual person talking doesn't turn out to be so crucial.

The one argument I can see where the broadband will turn out to be crucial is if all the rich people get it and all the services get designed assuming that people have it then, even though they didn't have to be designed that way, everything's got flash and everything's got streaming video, and even though those aren't crucial to the services, they could have been designed some other way they will get designed with that, and then everybody will need to have broadband. And I worry that we're sort of as a society about to throw away a lot of money by making everyone get broadband unnecessarily.

On the Deliberative Polling the one thing I want to raise is perhaps raise some controversy there, too. I really like this idea of not just thinking about people self-selecting and trying to have some other process for selecting. I'm not convinced that the very strong version you've talked about is possible though. That even if we do the selection

that it will somehow be truly representative of the nation at large or whatever grouping at large. There's still going to be differences in people's ability and willingness to participate. There's going to be the literacy barriers, some people are a lot better at convincing other people to change their mind, and that's not, some people are more willing to participate in this kind of thing. I don't think, again, I don't think video's going to solve this problem. It's true that there may be some things that will help, if you can have text to speech so that people can participate even if they're not great at reading but a lot of kind of the deliberation that's going to go on, there are going to be differences in skill levels and I don't think you're going to get something that is truly representative. I think it would be worthwhile to do some theorizing about what would a normative theory be of who we want to participate in these things if this Utopian ideal of truly representative is impossible? Maybe there's something else that would still be something we would be really excited about. Those are my comments. Thank you.

APPLAUSE

MIKE TRAUOGOTT: I want to thank all of the participants both for their interesting comments and also for sticking to the schedule so that we have time to take these questions that have come up from the floor. I've sifted through these cards and I've organized them in a way that I thought I would present them one at a time and give all of the panelists and Steve, in particular, a chance to discuss them. And so I've selected as the first question one that is directed exclusively to Steve but on which the others could comment.

Mr. Gorosh's presentation nicely demonstrates the schizophrenic way in which we conceptualize the possibilities of the Internet. We laud the democratic potential of the Internet and the access argument typically follows. At the same time we see virtual space increasingly colonized by commercial content and interests. Is there a conflict of long-term interests at play here? It is not only access for whom but the question of what content and for what purpose?

STEVEN GOROSH: Sure. Obviously that question is often raised and it's been commented here in terms of the panel. Let me start by stepping back a bit and talking real briefly about what I think of when I think of the Internet.

Above all, I think of the Internet as a platform, as an enabling technology. If you think of electricity lines that were laid at the beginning of the last century, no one had a clue that within a short period of time that we would have everything from record players to

TVs, microwaves, and all the other gadgets that flood our market. When the early computer was built, and this also goes to Paul's skepticism on broadband which I don't share, the only people who had computers before the software was written were the "techies" that played with the operating systems. I never understood what they were doing at that point, and I never will. But once these nifty software applications from wordprocessing to spreadsheets were developed, we have found important uses for the personal computer that were never imagined.

I think the same process has started as the information age goes along. The more visionary inventors in our world will use the bandwidth now available from broadband Internet access to develop new applications and content. Because of that, I'm not particularly troubled by the fact that there is a lot of junk. I don't see how that is different in a material way from any other issue in society. We don't close down grocery stores because they sell a lot of Pop Tarts, it's just a fact of living in this country. And to the extent that we believe in a marketplace, I suppose we have the right to reject those websites or applications that we feel come with an unwanted amount of junk. But I do not think that the alternative is not to exploit the Internet at all.

MIKE TRAUGOTT: Any of the other panelists like to add any comments to that or should I go on to the next question?

W. RUSSELL NEUMAN: I like Pop Tarts.

PAUL J. RESNICK: But we shouldn't subsidize them.

MIKE TRAUGOTT: But we shouldn't subsidize them. I have three questions that I think touch on the same topic. I'll read all three of the questions first and then we'll see who wants to give an answer. One of them is: what about the digital divide between the modern industrialized world and the developing world? The second question is: this sounds like rich nation, poor nation, or the north-south dialogue, the digital divide is a more global problem, how can the U.S. lead and help the third world? Don't define society as the U.S.A. And on a global scene, what are other countries doing to bridge the digital divide connecting homes, schools, and libraries? Who would like to start?

W. RUSSELL NEUMAN: Let me make a few comments on the global digital divide, which is much more dramatic than the internal, domestic digital divide. Half the world's population has yet to make its first phone call. Access to the telephone is measured in how many hours you have to walk before you can get access to a phone. And if you think about the need for medical care, the need to get medical care fast, if it's two hours to the nearest telephone imagine how long it takes after that to get the medical care. So that the notion of throwing computers into, for example, sub-Saharan Africa changes a whole lot of things. You get

penetrations of the telephone network in Africa and Asia averaging three telephones per 100 so at those kinds of rates talking about Internet penetrations is premature. So there's a lot and also there's all per unit time charging for telephone access, which means if you do have a computer and a telephone and an ISP you're paying very large costs per minute to get access over and above the ISP access itself so that the challenges are very, very great.

PAUL J. RESNICK: I agree with Russ that one of the big challenges in developing countries is the telecom monopolies that are charging high rates and not allowing other vendors to come in. I think one of the promising things is again these public solutions. When people have a phone it's often not just their own phone—other people use it. Similarly, people are setting up these community computing centers and telecommunication sites that are I think the promising thing for what's going on in the developing world.

W. RUSSELL NEUMAN: It takes a village to have an Internet connection.

STEVEN GOROSH: One comment on the technological underpinnings of the question. And then one other remark. The panelists are exactly right. It's almost silly to try to talk about the digital divide with developing countries who don't have phone service. Interestingly, however, technology is beginning to be of service there because developing countries that had never built a telecommunications plant that we laid so carefully a hundred years ago, are finding that wireless technologies can leapfrog the need to invest in an expensive wireline infrastructure. And wireless Internet will be more available once the technology increases.

The other thing I want to say about globalization is, again, I'm an optimist on the future and the significant role that broadband will play. There's a strong argument that globalization and the connectivity that the Internet will bring will have dramatic long-term human rights implications. Everyone knows that during the crackdown in China, one of the key mechanisms for communication was the Internet. The internet has also helped disclose other Human Rights violations. I doubt in a thousand years that you would see what you're seeing last week with the Taliban destroying Buddhist statues. If you are forced into a world where you get more familiar with different cultures—it seems to me, it's gotta be a good thing. In any event, it's inevitable. It is not going to be overnight, however.

I happen to enjoy DSL service to the home because my company does that. And for those of you who've never had a high-speed connection, I do not think it's a "slight" difference. I'm at the point now

where I will not use dial-up access under any circumstances—I'll just wait until I get access to one of my broadband connections. Because with dial up access, you make a query and something usually starts to happen and God forbid you want to download a picture or something, you wait for 3 lines to come in, and then 8 lines, then 14 lines. Even with a DSL connection, and this is just the beginning of this development, you push the query button and the thing is there. It becomes for those of us impatient people a tool of productivity at its best that I think is unmatched and again I think it's a taste of what's to come. So I'm a big optimist on the capabilities of broadband eventually to go around the world, but it'll take some time.

MIKE TRAUOGOTT: I'm going to ask part of this question again because I don't think that one part of the question was answered. Most of the responses had to do with the appropriate state of current technology especially in the united states but I'm going to ask part of this question again. That is, is there anything to learn from other countries in their treatment of the digital divide that would be useful in the United States?

STEVEN GOROSH: To some extent, the reason why we're so far ahead in broadband deployment as to some countries is that is unlike other models, we haven't tried to pick a winner, and we've tried to break up our monopolies and, therefore we've had the innovation that's made possible by those approaches. It's still early in this debate, the Europeans are sticking behind a clear standard on the next wireless generation, 3-G, which is a standard that will support broadband wireless, but that's an unproven winner. Some current technologies—satellite broadband, wireless broadband, they just haven't taken off. They maybe will, but there's been a lot of vaporware and hype. When I graduated law school fifteen years ago cable telephony was imminent we were told, and every year since. So I'm a little skeptical of picking a winner, I sure as hell couldn't do it. The key is to build a climate of relentless competition and innovation.

MIKE TRAUOGOTT: Well how about from the policy dimension in terms of regulation or policy to try to reduce or eliminate the divide. Is there anything to learn from...

W. RUSSELL NEUMAN: I think most of the lessons are negative. The French Minitel case, which was a heavily federally subsidized attempt to develop a highly controlled and non-open Internet is a counterexample of how to go. I think the Chinese case of trying to filter and censor the Internet and use it as a means of tracking what people are doing. I think the Burmese example which makes Internet access

criminally punishable aren't very good models for opening up internal and international communication.

MIKE TRAUOGOTT: Great. The next question is when people discuss the digital divide, they often say it will have negative economic consequences for the unconnected; yet, when discussing the Internet, people say it might help democracy—it's good for online shopping and entertainment. Where are the economic benefits for individuals?

STEVEN GOROSH: Yes, I at least tried to hint at that. If you want to be a secretary these days, and you only work on a typewriter, your skills are going to be less valuable. Your value as a productive economic entity going forward will be more and more dependant on, what Paul said, at least basic literacy (which we've never solved) and then, more important now, the bar's going to be raised to include computer literacy. And computer literacy can solve some problems. For instance, we participated in a telecommunications commuting study with low income people in Newark, New Jersey. One of the fundamental problems of our society is low income people often live where the jobs haven't been developed, so they set up a center in the center of Newark equipped with broadband, and people work for suburban companies effectively by having remote access to those suburban companies. If the problem is that you couldn't read, it is now going to be broader than that; now you will need to read and do basic word processing skills.

PAUL J. RESNICK: So there is the skills argument; there is also a social networks argument that you can get connected to other people. This is part of why being able to peripherally participate to monitor different groups is valuable to people; certainly we know from studies of how people get jobs that social networks are very important. It's also the case that productivity in the job turns out to be highly correlated. The people who get promotions are, you can sort of look at the graph of who they know and if you know 6 people really well versus you've managed to develop a wider network of weak ties, those people are more successful in business. I think actually the access to computer networks is critical to being able to develop these wider social networks.

MICHAEL TRAUOGOTT: I have two questions again that are very closely related, so I'll read them both before we get responses. Why are we more concerned with the digital divide than with the print and media divide? Isn't this a problem of literacy and school or library access? The second question is: to what extent is the bigger problem of the education divide useful to give computers to illiterate high school students? What if the teachers don't even know how to use the computers?

W. RUSSELL NEUMAN: I see this question as very supportive of the argument I was trying to make. I would hope they were written

while I was speaking to reinforce the importance. If you think about some young man or woman who spends seventeen years of their lives and finds themselves graduating from twelfth grade with third or fourth grade reading skills and nonexistent mathematical skills and very limited social and language communication skills. And this is somebody who attended classes probably at the average attendance for the community. The capacity of well trained teachers and reasonably well funded schools to get that person past third or fourth grade reading level indicates that it ain't easy and just saying well there's schools and opportunities turns out to be a very small part of the program to deal with the cultural definition of what school is for and why people go to school. And if you look at those repeated patterns in the curves where the Asian-Americans exceed, sometimes dramatically, higher scores in achievement and educational attendance than the average Americans or the white American sub-sample, you see that dramatic importance of cultural norms and the use of technology which I think is got to be the next step we address as we work through the digital divide itself.

STEVE GOROSH: One comment, it's an important question. There's no doubt that we have not succeeded as a nation to educate all our youth or solve literacy. So that's a given and it's an unfortunate reality. Russell is exactly right that you can throw a computer at someone who can't read and you're not doing a lot of good. However, I don't find that issue very interesting. If you look at the early examples of when we threw computers into schools, there was little training and little funds for maintenance. I'm not sure if that was a failure or a success but it was a start.

How do we keep that issue resonating? Well I think you have to give it a title even if it's a little sloppily defined, like the digital divide. You have to make a national commitment that this is of concern, unlike a ton of disparities that we tolerate for better or for worse every day, and you have to start throwing some action and some imagination at it. As the E-rate program, for instance, has gone on in time, there was a Benton foundation study just a few weeks ago, and they found that things have gotten better. They now have some rigorous requirements. They found that now the school districts are doing extensive planning before they get the computers, they've learned some of these lessons about training and access, they're drawing on companies for the technical assistance and maintenance. This experience exists in the country, it just needs to be brought into the schools. Yeah, there are some really stupid ways to do this, but people have already with some help, some financial assistance, learned to do it. I think that's the only way forward out of this thing.

MIKE TRAUGOTT: I'm going to ask one final question and then we will talk a little bit about other administrative arrangements. Largely rural states seem to have benefited from the FCC's universal service policies. Sometimes at the expense of ratepayers including low-income people in urban states. Would you comment on the proposal to use block grants to states for e-rates and universal service provision? Did you write this question, too?

W. RUSSELL NEUMAN: Yes. In the American political context, because of the structure of the U.S. Senate, you will find a lot of power from rural America represented in Senate-initiated federal policy and you see the Senate Communications Subcommittee headed by Senator Conrad Burns from Montana, which by the way has a very high Internet penetration rate. Just an aside. When we were talking about the other countries and the U.S. I was thinking that half the people in this room assume that the highest Internet penetration rate is the U.S. It's not. The U.S. is fifth. Most of the other countries ahead are Scandinavian countries, by the way. You will see a thumbprint on American policy, which will subsidize developments in rural areas because of the density disadvantage in any infrastructural telecommunications area like the rural electrification administration, a tradition going back many many years. I think it's just a political reality here and it's a subsidy, perhaps an unfairness to the rate payers in urban areas, but indeed a political reality that came with the creation of the United States at the very beginning.

STEVEN GOROSH: I had an interesting discussion with John Young on this issue last night. He's a panelist tomorrow and was very active in Bell Atlantic regulatory affairs for a long time. And the question was if we had to do it over again would we have universal service for telephony. Because the way we accomplished Universal Service was to establish a subsidized monopoly with an elaborate, arguably horrific, set of hidden subsidies. And where it really started to break down is when we tried to move into a competitive world. Because if you subsidize business by charging them for residential calls, and then you allow long-distance competition for MCI then MCI can come in and "cream skim" those businesses being charged "artificially" high rates that include subsidies that only the Bell Company has to charge. And we're going through a tortured period now where we're trying to unwind those subsidies so that we can move to a truly competitive era and we obviously haven't figured it all out. But in any event, I think everyone now agrees that if you want to subsidize, don't mess up the rate base, do it as a targeted subsidy to end users. It's the idea that you should give the end-user, like we do, the lifeline service that promotes universal

telephony service. We give money to the end-user so they have enough to afford basic service, don't give it to some designated incumbent, because then you basically create an environment where competition and innovation can't flourish. People now see broadband access dangling in front of them and like the idea that they can live anywhere and be active members of the global economy. They really see this need, and they're reaching out. The question at the end of the day is how much money are we talking about and whatever we do let's provide it in a way that doesn't mess up competition.

MIKE TRAUGOTT: Thank you, Steve. I want to remind you first of all that you've been listening to the third panel in the conference program and that in your folder there's a yellow sheet for evaluation of the panel. It says number three on the top and we would appreciate it if you would complete that. Secondly, I'd like you to join me in thanking Steve Gorosh and the other participants, the discussants on the panel, for a very interesting and stimulating set of comments. And, finally, maybe the Dean has a word to say about lunch.

DEAN JEFFREY S. LEHMAN: Are there any Pop Tarts? For you, Russ, we have Pop Tarts. For everyone else there's something a little bit more elaborate in the Michigan Ballroom right now. We will have an opportunity to listen to a wonderful speaker, Rick Snyder. So if everyone can pack up and we'll head over to the Michigan Ballroom. Yes in the Michigan Union. And then we have one panel this afternoon back here at 2:00. Thank you.

END OF SESSION
