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PROGRAM: Caucus: New Jersey with Steve Aduato

Interview: Wireless telecom expert Ono Nobuharo, technology counsel Braden Cox, Dr. Larry Cox and Dr. Roxanne Hiltz discuss how new and emerging technology does and will impact our lives
STEVE ADUBATO, host:

The future of technology and what it means to you, next on CAUCUS: NEW JERSEY.

Announcer: Funding for this edition of CAUCUS: NEW JERSEY has been provided by Rutgers, the State University of New Jersey; the HealthCare Institute of New Jersey, promoting public awareness of the pharmaceutical and medical technology industry of New Jersey; Verizon Communications; and by Roche.

PAULA M. LEVINE reporting:

MP3 players.

Computer Voice: You've got mail.

LEVINE: Computers. Cell phones. They're an integral part of all of our lives, but they are just the tip of the technological iceberg. Right now scientists and researchers are hard at work on an array of new devices that will not only dazzle the mind but also impact our lives. Dr. Dimitri Metaxas directs the Center for Computational Biomedicine Imaging and Modeling at Rutgers University.

Dr. DIMITRI METAXAS (PhD; Director, Center for Computational Biomedicine Imaging and Modeling, Rutgers University): The three areas of focus are the modeling of the heart, the analysis of facial expressions for--that reveals stress, and the modeling of clothes and fluids for special effects.

LEVINE: While they may sound wildly diverse, what these three areas have in common is the analysis and synthesis of movement, like the beating of a human heart.

Dr. METAXAS: The method allows us to see the 3-D movement of the heart, which is not possible with traditional MRI data. With our method, you can see the 3-D volumetric movement of the heart, and that allows you to see better the movement and diagnose the disease earlier.

Unidentified Man's Voice: Three, two, one. Booster ignition and liftoff.

LEVINE: When NASA wanted a better way to visually check the stress level of astronauts in space, the technology was also able to help.

Dr. METAXAS: The method works by feeding a three-dimensional virtual mask, a face mask, on the images--or the image sequences we acquire from cameras. And that mask allows us to extract the three-dimensional movement of the face, and based on that movement, we're looking for asymmetries in the lips and the eyebrows.

LEVINE: And by analyzing these asymmetries, the ground crew can actually see if the astronauts are stressed. In the future, this analyzer could also have

homeland security applications.

If you saw the animated movie "Antz," you saw some of the other work that Dr. Metaxas' students are doing. They've developed software that simulates movement of water, fire and clothing. While the applications now are mostly for special effects purposes, plans are under way to use it for security, fashion and medical purposes as well.

Just across the street is WINLAB, the Wireless Information Network Laboratory.

Dr. BIPANKER RAYCHAUDHURI (PhD; Director, WINLAB, Rutgers University): We work on wireless technology of the future, and that includes wireless devices, hardware, new kinds of software technology, building new systems. And we work with major companies in the field.

LEVINE: And these devices will impact every industry in every generation. E-ZPass is an example of sensor technology at its most helpful. The ability to track a patient with a pacemaker is a perfect use of wireless capability. Even grocery shopping will be made easier when you order online and your bag is pre-tagged.

Dr. RAYCHAUDHURI: In terms of dollars, you know, wireless is a huge industry right now. It's the largest segment of information technology industry, and it's growing very rapidly. So if you look at equipment sales, we're looking at 50 billion plus worldwide. If you look at services, that's probably another couple of hundred billion worldwide.

LEVINE: Yet despite the advances we see in daily use, the research process behind the scenes can be amazingly low-tech.

Dr. METAXAS: (To colleague) So it's a good approach...

We have weekly meetings where we throw out ideas, and based by knowing what's out there in the field and knowing what's needed, then we come up with new methods or new ideas to advance the state of the art.

Dr. RAYCHAUDHURI: The whole process of discovery is one in which people need to start with an open mind, and through it there's a lot of failure. And after lots of failures, occasionally you get this one really great idea which stands out.

LEVINE: The really great ideas can take literally years of manpower and millions of dollars. But when they work, they're well worth the time and money.

Dr. METAXAS: Things that we plan for the future is basically the clinical translation of our software for medical applications so that we can detect cancer faster, cardiac problems faster, and make sure that our software is used by clinicians. That will be a big leap towards translating our research to become very useful to people.

ADUBATO: Welcome to The Shape of Things to Come, our special CAUCUS series looking at innovative research taking place in The Garden State as well as nationally. I'm Steve Adubato.

E-mail, the Internet and cell phones have revolutionized the way we do business and communicate in our daily lives. Joining us now to discuss the

latest advancements in communication and information technology are Nobuharo Ono, who is the president and chief executive officer of NTT DoCoMo USA, a major telecommunications provider in Japan; Braden Cox, who is technology counsel at the Competitive Enterprise Institute, a public policy institute based in the nation's capital, Washington, DC; our good friend Dr. Larry Londino, professor and chair of the Department of Broadcasting at the distinguished Montclair State University, where, of course, I got my undergraduate degree--They were more distinguished after that--Dr. Roxanne Hiltz, who is distinguished professor of information systems in the College of Computing Sciences at NJIT, which is otherwise known as?

Dr. STARR ROXANNE HILTZ (PhD, Information Technology Specialist): New Jersey Institute of Technology.

ADUBATO: Excellent.

Folks, thank you for joining us. This is The Shape of Things to Come series we've been doing for a few months now. You're gonna see a resource guide throughout this program. You know us. Here in public television, we send that resource guide six to eight weeks--everything you've ever wanted to know about technology and communication, information technology and communication--we'll send to you in six to eight weeks. I'm going to go to our good friend Larry Londino.

Let me ask you. Larry, you saw the tape. It's changing our lives, right? Could we have ever anticipated that technology and information--technology and communication would change our lives to this degree? Did we see this day coming?

Dr. LAWRENCE J. LONDINO (PhD; Professor and Chair, Department of Broadcasting, Montclair State University): Well, I'm probably a good person to ask. When I was in graduate school in the late '60s, there was a book, "Wired Nation"...

ADUBATO: Yes.

Dr. LONDINO: ...and our professor presented it to us, and I argued vociferously against the concept that the networks would not be driving broadcasting in the late '60s, to the extent that afterwards some...

ADUBATO: The TV networks.

Dr. LONDINO: TV networks. To the extent that afterwards a lot of the students came up to me and said, 'Larry, that was great what you did.' So obviously I'm not much of a prognosticator. But clearly there are all kinds of effects on our daily lives. I look at it mainly from the production standpoint--television and film programs--recently, the "Star Wars" films that have come out. And Lucas has pioneered in digitalizing of not only the raw material that they shoot and how they edit, but now this recent "Star Wars" edition is being beamed via satellite to distribution points.

ADUBATO: Translation: movies on demand. We order movies right from our--we don't go to the movie...

Dr. LONDINO: Exactly.

ADUBATO: Well, we go once in a while, but--Boom!--there it is. We can get

the movies. How much more is it gonna change our daily lives at home with respect to entertainment in the home?

Dr. LONDINO: Well, again, it will be movies on demand. You'll be able to look at them and decide exactly what you want to see when you want to see them at any time.

ADUBATO: Based on my needs--our needs...

Dr. LONDINO: On your needs.

ADUBATO: ...the consumers' needs.

Dr. LONDINO: Yeah, I mean, even now with TiVo, which allows--which is one of the systems that allows you to record television programs. We've totally revolutionized your use of time. It used to be prime time was...

ADUBATO: Right. Now whenever.

Dr. LONDINO: ...significant--8 to 11.

ADUBATO: Now I'm on my...

Dr. LONDINO: It's any time.

ADUBATO: Plus on my 50-screen television, so you don't...

Dr. LONDINO: Plus you don't have to look at the commercials...

ADUBATO: Fifty...

Dr. LONDINO: ...necess...

ADUBATO: Right, 50-inch television. Thank you, Bill, for telling me that.

Dr. LONDINO: You don't necessarily have to look at the commercials if you don't want to, so...

ADUBATO: Flip right through them.

Dr. LONDINO: Of course.

ADUBATO: Mr. Ono, let me ask you...

Mr. NOBUHARO ONO (Wireless Telecommunications Expert): Yup.

ADUBATO: ...in Japan...

Mr. ONO: Yup.

ADUBATO: ...very far ahead of where we are here? And if so, how?

Mr. ONO: Yeah, so we have three different services that are not available here in the United States.

ADUBATO: Like?

Mr. ONO: There--number one, it's so-called wireless Internet access service, so the--in Japan, people use handsets like this...

ADUBATO: What do you have here?

Mr. ONO: ...to exchange e-mail and access to the database or download the games or ringing tones and so on and so on. But here in the United States, if people use cell phone access, right?

ADUBATO: You guys follow this? Cell phone--how is that different in Japan?

Mr. ONO: So the second difference is the high-speed communications for up to 40 times as fast as the previous--or American network. So the people can enjoy video downloading or video phone service.

ADUBATO: Yeah.

Mr. ONO: And so the video conferencing service by cell phone.

ADUBATO: By cell phone.

Mr. ONO: By cell phone.

ADUBATO: We don't have that.

Mr. ONO: So my point, video conferencing service. Or also the video phone with not only domestic service, but also we can provide international service with UK, Singapore, Hong Kong and Korea.

ADUBATO: Changes dramatically the way you do business.

Mr. ONO: Right, right.

ADUBATO: Let me ask you, Dr....

Dr. HILTZ: It changes also how you do education.

Mr. ONO: How so?

Dr. HILTZ: That's what I've been studying.

ADUBATO: What's online, by the way?

Dr. HILTZ: OK. Online education or virtual classrooms I've been looking at for over 20 years. NJIT pilot--was piloting the first virtual classroom in the early 1980s. What we have is whole degree programs online. We were among the first, but as of last year over two million students in the universities of the US were taking online courses.

ADUBATO: You don't go to the class?

Dr. HILTZ: No. But you have an instructor. By 'virtual classroom' we mean that all of the communication types that you can do in a traditional physical classroom occur. You can not only communicate with your teacher and with the resources of knowledge, but also with the other students.

ADUBATO: So we're students in a class together.

Dr. HILTZ: Right.

ADUBATO: I want to interact with you and ask about an assignment that Dr. Londino has put out there. We now have an ability to interact that we wouldn't have if we were in the class?

Dr. HILTZ: Well, in today's classroom they might be sitting there with handhelds interacting behind the teacher's back, but instead of passing notes, they're passing instant messages. Well, what happens is there's full class discussions, so usually threaded discussions, meaning every reply is attached to the original question. So when you look later on, you can see the question--everybody's point of view all sort of collected and organized for you. And each person in this form of communication can take as long as they need to think through and sort of draft and put in their ideas. They don't have to answer when the teacher calls on them.

ADUBATO: But--I appreciate what you're saying, but as someone who has taught--I mean, I actually taught up at Larry's place and taught at other places--I love the face-to-face interaction with the students. How--don't I lose that here?

Dr. HILTZ: Obviously you lose the face-to-face, although there can be some synchronous video or audio sessions occasionally. Most of the communication is asynchronous, meaning anytime, like e-mail. You send when you have the time; people read when they have the time. People used to say, 'Well, you can't really have relationships this way,' but I think ever since "You've Got Mail" with Meg Ryan and Tom Hanks...

ADUBATO: That changed everything?

Dr. HILTZ: It changed people's perception...

ADUBATO: By the way...

Dr. HILTZ: ...that you can have personal communications, real communications. You can actually...

ADUBATO: Goo...

Dr. HILTZ: ...get to know people.

ADUBATO: It's a good point. By the way, I want to clarify something. I was just remembering, Larry--I was just told by our producers, yeah, I taught the course, but I did send out a lot of e-mails. We had over a hundred students.

Dr. LONDINO: Yeah.

ADUBATO: 'Hey, here's the assignment. It's changed this week. Watch this program.' And I couldn't have called everyone on the phone.

Dr. LONDINO: There isn't any question that there are certain classes, certain courses...

ADUBATO: Right.

Dr. LONDINO: ...certain areas which it's very effective. And we're in the

process I think still of perfecting this technology. And it reminds me very much of the late '50s, early '60s, when educational television was the thing.

ADUBATO: Right.

Dr. LONDINO: The--here we had this opportunity to multiply excellence. You had this great teacher in the classroom, and you--it was obvious you got television; you could do it all over the country. You weren't restricted. Do you remember the early experiments in educational television? It was deadly boring.

ADUBATO: Right.

Dr. LONDINO: Why? Because all of a sudden this guy got in front of a television screen--he wasn't a performer, and it didn't multiply. But little by little, we developed techniques and we made...

Dr. HILTZ: Right.

Dr. LONDINO: ...educational television programs that were certainly every bit as effective. But...

Dr. HILTZ: And now...

Dr. LONDINO: ...I think we're in that form.

Dr. HILTZ: ...I think the real key is having instructors who learn how to teach the best way using this new medium...

ADUBATO: But you have to learn...

Dr. HILTZ: ...and you have to...

ADUBATO: ...how to teach with that technology.

Dr. HILTZ: You have to--right.

Dr. LONDINO: Exactly.

ADUBATO: I'm going to bring Mr. Cox...

Dr. HILTZ: You have to learn to teach so you can bring the students into actively participating all the time, really...

ADUBATO: OK.

Dr. HILTZ: ...exchanging information with each other.

ADUBATO: But beyond the whole online and distance-learning issue, there's an entertainment component here, and there's a bigger piece to this. Government's role with respect to regulating, not regulating--how do you regulate this stuff we're talking about here?

Mr. BRADEN COX, Esq. (Technology Counsel, Competitive Enterprises Institute): Well, that's a good question. We've been talking about how all these dynamic changes are happening in the marketplace. One thing that hasn't changed is the regulatory structure that governs this. And that's something that needs

to change, and actually there is a consensus in Washington that agrees with that. And the question is, well, how do we change? And how do we govern the Internet, which is a centralized model?

ADUBATO: Well--excuse me. Didn't the Telecommunications Act of 1996 say, 'Hey, you're on your own'?

Mr. COX: Oh, well, the '96 act is out of date even nine years later. It's something that basically fixed categories. It assumed that cable companies always were just TV companies, phone companies were always just delivering local phone service, and wireless companies were just gonna deliver voice wireless.

ADUBATO: Wrong.

Mr. COX: Wrong. Everything's converging nowadays, and the market is diverging from the law.

Dr. LONDINO: It's interesting to...

ADUBATO: And so therefore, the role--go ahead.

Dr. LONDINO: It's interesting to note that if you look at the various pieces of broadcast legislation--1927, the Radio Act of 1927--and then all of a sudden within--till 1934, they realized, 'Well, Radio Act. That's--television.'

ADUBATO: Right.

Dr. LONDINO: And then it became a communications act, and now it becomes a telecommunications act. So...

ADUBATO: But wasn't the Telecommunications Act of 1996...

Dr. LONDINO: ...it can't keep up.

ADUBATO: ...trying to encourage on some level cable going into these other areas and--wasn't it trying to break the walls down? And let me ask you, on--from your end, Mr. Ono, does the government or should the government be playing an active role in regulating this stuff, or should the marketplace dictate?

Mr. ONO: Of course, the marketplace--the market should dictate the--and the--I'm not the right person to discuss about the regulation issues. I'm technology.

ADUBATO: Well, tell us from a business point of view.

Mr. ONO: Yeah.

ADUBATO: What do you find that most consumers really want with respect to telecommunications, information technology? What do most people want? Or is the population so fragmented that older folks continue to be resistant? Younger folks demand it. They won't accept anything less. Can you talk about the public wants, or do you have to talk about different publics?

Mr. ONO: Yeah, customers want to have authority or less expensive service.

That's it, I think.

Dr. HILTZ: Well, also usability, and this relates to the age gap. I'm actually working on a special issue of a journal on information technology for an aging society. And what we find is a tremendous age gap in willingness to use small, handheld wireless devices.

ADUBATO: Who's into what?

Dr. HILTZ: The youngest generation, and I'm talking about under 20...

ADUBATO: Right.

Dr. HILTZ: ...walks around with two or three devices that are constantly on. I mean, if one's battery gives out, they have another one. Their...

Dr. LONDINO: Very comfortable.

Dr. HILTZ: ...communication is tremendously geared towards online, now, wireless, computers, whereas over-65's--only about 5 to 10 percent actively use the Internet at all, even on a desktop.

ADUBATO: Five to 10 percent. That's it.

Dr. HILTZ: That's it.

ADUBATO: Is the number rising dramatically?

Dr. HILTZ: Not dramatically, and I think one thing is that we have to think about the devices we create, and are they usable by older people who might not have as fine skills...

ADUBATO: You mean dexterity?

Dr. HILTZ: ...in eyesight, dexterity, etc. The market-testing is where the market is now with the younger users, but we can't leave the older users out. We're going to have to think about the fact that more and more of us are getting older all the time and that...

ADUBATO: And we have to be more consumer friendly.

Dr. HILTZ: We have...

ADUBATO: Larry, jump in here.

Dr. HILTZ: ...to be more consumer friendly for older...

Dr. LONDINO: It's--I was in Tel Aviv a few years ago, and they seem to be a little bit ahead of us in cell phones and devices. And a couple of faculty colleagues, we were working down the street in Tel Aviv, and this young woman was walking in the opposite direction, and she was on a cell phone, and she was crying her eyes out as she was walking along. And I remember stopping and thinking, she's continuing to live her life while she's having this obvious emotional trauma, which I would normally relate to sitting in a living room...

ADUBATO: Right.

Dr. LONDINO: ...if I was talking on the phone.

ADUBATO: Right.

Dr. LONDINO: She obviously was publicly walking like--and she--was some traumatic effect. And I thought, 'This is a different way that people are using communication tools.'

ADUBATO: And by the way, one of our colleagues, Bill Berlin, who was also with you, said that you also saw soldiers with a gun in one hand and a cell phone in the other.

Dr. LONDINO: Cell phone in the other.

ADUBATO: Therefore? I mean, communi...

Dr. LONDINO: Therefore, they are much more comfortable with this stuff than I am.

ADUBATO: Is it--by the way, put up our resource guide--our Shape of Things to Come resource guide, folks in the control room, if you could put that up. Call the number on your screen. Six to eight weeks from now, we'll send you a very valuable resource guide. It is low-tech, I will say that. There's a bunch of paper in there. It's going to send valuable information. But also you can log on to our Web site, and we will link to a variety of other places where you can get good information.

You know, the question about technology--someone who says, 'Is that technology good or bad?' And it's kind of a dumb question because it's what is, and it's what we do with it, right, Mr. Ono?

Dr. HILTZ: It's how...

Mr. ONO: Yeah.

Dr. HILTZ: ...it's used.

ADUBATO: It's how it's used. It's not the technology that's good or bad, correct?

Mr. ONO: I think technology is good, and--but the question is how to use that, right? So the--for example, I have video phone, cell phone...

ADUBATO: Right.

Mr. ONO: ...so the--it's a surprising thing that the blind person appreciate video cell phone. Why? Blind people cannot see the screen, but they very much appreciate the video cell phone.

ADUBATO: Right.

Mr. ONO: Why? So--because they are--the--this handset is linked to his supporter, and supporter tell what the blind person should do.

ADUBATO: Right there on that.

Mr. ONO: Yeah.

ADUBATO: By the way, guys, take off the chyron on the lower third because you can't see what Mr. Ono is holding. Hold that up again, because I want people to see that. So you're saying that this--which looks like a traditional cell phone to me--but it's more than that?

Mr. ONO: It's video phone cell phone, so...

ADUBATO: Can I hold that for a second?

Dr. HILTZ: You can actually...

Dr. LONDINO: You can transmit...

Dr. HILTZ: ...have a multi-person video conference.

Dr. LONDINO: ...transmit and receive with this?

Dr. HILTZ: Yes.

ADUBATO: This can--I want to be clear with this.

Dr. LONDINO: This is scary.

Mr. ONO: This is a camera.

ADUBATO: This is a camera?

Mr. ONO: Camera.

ADUBATO: Folks, can you take a look at this? OK, take a look at this. This, right here, is a camera.

Mr. ONO: Right, right.

ADUBATO: OK? Which I'm not understanding, in the first place.

Mr. ONO: Yeah.

ADUBATO: And as I hold it here, Mr. Ono, talk to me about what this can do.

Mr. ONO: OK. So...

ADUBATO: Let me hold it...

Mr. ONO: OK.

ADUBATO: ...because--I'm not going to steal from you. Trust me. Just talk to us about it. Go ahead.

Mr. ONO: Yeah, so video phone, you can understand that?

ADUBATO: Yes.

Mr. ONO: Talking with the other party...

Dr. LONDINO: And they can see you.

Mr. ONO: We're looking at the base...

ADUBATO: Right.

Mr. ONO: ...seeing the base. But talking about the video phone, the--I had to say several times--they got the reactions from ladies...

ADUBATO: Right.

Mr. ONO: ...that 'After taking a shower, I don't want to take video phone call.'

Dr. LONDINO: ...(Unintelligible)

Mr. ONO: Yeah. But...

ADUBATO: Where's my privacy?

Mr. ONO: But--yeah. For that purpose, we provide a new service, which can replace live face with animated cartoon, which display our motions and movements.

ADUBATO: Really?

Mr. ONO: Yeah.

Dr. HILTZ: All right, enough of that.

ADUBATO: Did you know...

Dr. HILTZ: If you're not happy with that...

ADUBATO: Here you go.

Mr. ONO: Thank you.

Dr. HILTZ: ...you can have an avatar created--this is going to be one of the new consumer goods, a custom avatar that makes you appear as a--sort of a character that you always wanted to be so that you're having a video conference with everybody's avatars.

But I wanted to pick up on privacy. This is--these conversations can be--they're digital, so they can be recorded. Who owns the recording of that four-way video conference?

ADUBATO: This is co--one second. Mr. Cox, this is something that you think about a lot. Who does own it? Intellectual property, who owns it?

Mr. COX: Well, intellectual property is the--whoever's participating has rights to it, but you--there are ways to protect it. Perhaps we will be using some sort of encryption technology if the bandwidth and the devices go up to that point. But going back to your earlier question about the technology, it is inherently neutral, though, too, and...

ADUBATO: The technology is neutral?

Mr. COX: Is neutral...

ADUBATO: Not good or bad?

Mr. COX: Well, e-mail can be used to keep in touch with somebody across the country. It can be used to spam a million people.

ADUBATO: So to say, 'People--oh, e-mail's terrible'--to--all of a sudden you're able to connect with someone--a relative or a friend you haven't seen in 20 years. That's pretty good.

Mr. COX: That is good. The...

ADUBATO: So it depends upon what...

Mr. COX: It...

ADUBATO: ...the intent or motives are of those who use...

Mr. COX: And that should be just like any other law. We've had fraud-based laws. We've had laws that usually go to intent. That's the criminal standard, but any kind of standard, that's what we need to think about with new technologies instead of rushing to formulate laws that are based just on that technology.

ADUBATO: Larry, The Shape of Things to Come is the name of this series. Where are we going with respect to traditional broadcast television? Is it going by the boards?

Dr. LONDINO: Traditional broadcast television, yes...

ADUBATO: Radio...

Dr. LONDINO: ...definitely it's going by the...

ADUBATO: ...by the boards? Howard Stern, as we do the program right now, is leaving...

Dr. LONDINO: Of course, we'll be leaving.

ADUBATO: ...regular radio...

Dr. LONDINO: Right.

ADUBATO: ...leaving FM radio.

Dr. LONDINO: Interesting...

ADUBATO: And he's...

Dr. LONDINO: ...question about whether it will be...

ADUBATO: ...going to satellite.

Dr. LONDINO: ...regulated or not eventually. Now it's not regulated.

ADUBATO: Government's gonna regulate satellite?

Mr. COX: Well, do we want to have indecency laws extending to cable and satellite? I say no. I'm--but there are a significant number of people that actually think there should be.

Dr. LONDINO: Another question is the--I look mainly at, for instance, the post-production in film and video. It's been revolutionized by computers in the last couple of years. I heard an interesting interview with Thelma Schoonover, who's Martin Scorsese's--she does most of his films, edited them. And she was asked, 'Well, does it make you more creative?'

ADUBATO: Right.

Dr. LONDINO: And she said, 'No, it doesn't make me more creative. What it does is...

ADUBATO: You can't think of more things?

Dr. LONDINO: ...it allows me--she said, 'It allows me--if he comes in to look at a scene, in the old days, I would have to physically, first of all, record every one of the edits, and then I would have to rip them apart, literally rip them apart, and show him...'

ADUBATO: But now?

Dr. LONDINO: Now she can do five of them--save the five of them--he comes in, looks at the five, then says, 'OK, that one looks the best.'

ADUBATO: It makes you more efficient in production...

Dr. LONDINO: Yeah, it does.

ADUBATO: ...and productive doesn't necessarily make you more creative.

Dr. LONDINO: But it doesn't make you more creative.

ADUBATO: OK, The Shape of Things to Come. Real quick, a minute and a half left. Where are we going?

Dr. HILTZ: Well, in education, the large-scale impact of online learning is that any university anywhere can educate anybody else. I think we're going to lose a lot of our traditional universities. A lot of American students are going to start being--foreign students who came to America are going to take online courses from Australian universities or German universities.

ADUBATO: All the walls are coming down.

Dr. HILTZ: All the walls are coming down.

ADUBATO: Mr. Ono, where are we going? Shape of Things to Come?

Mr. ONO: Yes, so the--for example, last year we embedded contact-less IC chip on the cell phone, and by this, we can pay money, or it works as IDs or coupons or so on and so on. So the cell phone will become an indispensable lifestyle support tool.

ADUBATO: You will not be able to function effectively, efficiently...

Mr. ONO: Efficiently.

ADUBATO: ...without that cell phone?

Mr. ONO: Right.

Dr. LONDINO: That's...

ADUBATO: Because the cell phone that we're thinking of today won't really be the cell phone of three, five, 10 years from now, right?

Mr. ONO: Yeah, 20 years already.

ADUBATO: Twenty years.

Mr. ONO: Yeah. Yeah.

ADUBATO: Real quick, where are we going? Thirty seconds.

Mr. COX: In the regulatory area, look for just light-touch regulation of Internet-based services, knowing that that's the best way to get these types of new technologies in the hands of consumers at the best possible price.

ADUBATO: Larry, 10 seconds.

Dr. LONDINO: Consumer is gonna become more the producer.

ADUBATO: I like that. On that note, I promise you, this will not be the last program we do on technology, information systems, the whole bit, because we don't know exactly what shape things are gonna be. Great job, everyone. Thank you very much.

Dr. HILTZ: Thank you.

Announcer: If you would like more information on this program or if you'd like to express an opinion, e-mail us at info@caucusnj.org. And visit us on the World Wide Web at www.caucusnj.org.

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