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>> Good afternoon. This is Janet Satan. We will be a starting 11 are shortly. If you need technical assistance, please e-mail us at State eight. Again, the webinar will start shortly. Thank you.
>> My name is Sandra Scheer. I want to welcome you to our webinar this afternoon, leveraging the government experiments through QR code. We have a very distinguished guest panel with us this afternoon. Our guests are going to share with us what is a QR code, how could we use, therefore to increase citizen engagement? So I want to go ahead and start off by introducing to all of you our guests. First, we have Jeremy Vander when. Jeremy serves as the technical lead and content management system expert for the AIDS.gov website, which is sponsored by the U.S. Department of Health and Human Services area. He has represented AIDS.gov at a number of high, visible events and technical conferences to include the health summit which was opted by -- which was hosted by NAH. He also presented at the New York social media conference as well as [indiscernible].

>>> Our next speaker on the panel is Dustin Haisler. He is the former assistant city manager and chief information officer for the city of Maynard, Texas. While there, he entertained a number of solutions to increase the efficiency and cut costs. One of the most notable projects that he and his team put together was the deployment of quick response codes throughout the city of Maynard. That was such a huge, huge success. We will definitely want to hear from Justin about that. And then last but not least we have Joe Barber. Joe is the chief QR officer of code QR. They are a proud supplier of vendor independent 2 D barcodes for the global high-volume transaction output industry. I know that Joe is going to share with us some best practices and would basically share with us how we can use that as well within our community. Without further ado, I am going to go ahead and hop off and we will start our webinar. Thank you so much. Still a good afternoon, everyone. My name is Jeremy Vanderlan.

>> I am just going to talk about how the AIDS.gov project approach to using QR codes in the line of promotion that we do HIV prevention for resources related to AIDS.gov and some of the tools that we actually feature on the website. So to tell you a little bit more about what AIDS.gov does, we are a website for the Department of Health and Human Services. We feature basic HIV information as well as federal resources and resources on using new media in the fight against HIV AIDS. So in our project but we wanted to do was begin to connect people to some of the mobile resources that actually have for the website, so that's what I'm going to talk about.

>>> What I do -- I'm actually the technical lead for the AIDS.gov project. I'm also interested media leave for my company. An overview of what I will talk about. We will talk about how we approach using QR codes and some of the things we've seen just even before we decided to start using QR codes in our promotion, some of the things we were seeing as we look around and began to notice all of the strange barcodes popping up everywhere. I will talk about AIDS.gov specific approach, and then I will go over some of the best practices and resources that we discovered as we were going through this process. Finally, I will invite. Would you want to track and measure how we use QR codes and how people are actually using them. So we do actually attached some analytics. First off, I also wanted to mention that 2011 marks 30 years of AIDS. If you go to the AIDS.gov website, you will see some great resources talking about the history of this disease and where we have come from since it was first discovered in 1981. So QR codes are ubiquitous and are becoming ubiquitous. It's kind of funny. We seen him around in a bunch of different places. This was actually -- this right here was a QR code attached to a free taco. This time and right decided that he thought it would be good to put a QR code on the back of his backpack. I don't know if he thought people would perhaps scam that. We saw this on the street but didn't really necessarily want to click on it. Again, there's

a little bit of context there. And then this one as well. We thought it was interesting just because it had a little bit of a different design to it. I think there is something that is common with the four examples I mentioned in that they all kind of lack a context. They are just there to be scanned but they don't actually -- you know, you don't see anything that actually attaches either a value or brand to that QR code. It's just kind of a code sitting there. I think that was one of our first important considerations in implementing QR codes. We needed to realize that part of the credibility of your project is attached to that QR code. So at AIDS.gov we came up with a couple guiding principles in terms of how we were going to use those QR codes.

>>> The first was that we wanted to have some credibility in context: To make sure that whatever we were going to be featuring in whenever we showed a QR code that there was actually some context associated with it. It wasn't just simply a barcode but it was attached to something that gave it meaning. This would provide convenience but at the same time there will be plenty of other information there to have someone actually be able to see it. You will see on the right-side, this is for our campaign which is a photo sharing campaign. That particular QR code is used to connect people to the website. So another reason we wanted to actually get people a reason to scan. You can see there's a pretty good lineup of why they might want to skim that. A line with that purpose is there is actually value in making that. You are not just doing it because you don't know where it's going to take you there yet you know exactly what that code should do. Finally, we wanted to make it so that it was mobile specific. You know, people are not going to be standing at their desktop. They are going to use their mobile device. We wanted to try to connect them to something that was mobile.

>>> In terms of the AIDS.gov approach, we have numerous mobile resources on the website. We also have different printed resources including fact sheets, promotional materials on the things that are distributed to community partners. So there are a lot of printed materials that we actually have an opportunity to place some kind of connection on, you know, perhaps be able to put codes that people will be -- or that people will want to scan that QR code and look for more resources. So we wanted to tie them to some of the printed resources we were already distributing. We wanted to make it printed as well. We wanted our codes to stand out and not just be a QR code that was out there. We also wanted to make sure we were using analytics to measure the effectiveness of what we were doing. Also, we realized that the QR codes needed to be simple and needed to connect to those mobile resources. The other thing we wanted to make sure we were doing is as we worked on this project, we wanted to make sure we were sharing these best practices within the HIV AIDS community so they could go out and do the same.

>>> So these are the best practices we discovered as we worked on this. We realized that long URLs to create complicated codes. This is just an example of one. At the AIDS.gov website, the way we have it written it has some longer URLs. So these longer URLs tend to make a very complicated barcode to actually be able to scan. We wanted to make sure that we weren't requiring people to scan something that was overly complicated and may not actually work for their particular device. Again, that was one thing we realized that we needed to find a way to do things better. So we decided to simplify some things for best results. The suggested size is a minimum of 1.25 by 1.25 inches. For a QR code, you want to be around that size. Anything smaller and people may have difficulty scanning it. The second thing is using a URL shortening or if possible. In this case, that's going to decrease the need for a larger size shoe are code but it's also going to have a mini that larger kind of, you know, very complicated QR code that you saw on the previous slide. Also, we wanted to make sure that we had space around the QR code. Again, this will aid in actually being able to scan code. There will be anything getting in the way of whatever the mobile device is trying to scan. When possible, we are actually adding a link as well, because it's inevitable that someone out there, and since this is going to the public, someone is going to have a device that may not actually be able to access that code. We didn't want to leave people frustrated so we decided to make sure that we had some kind of a company URL with every barcode without disapproval would know where they were going or know where they could go if the code doesn't

work. Finally, and I said this before, we didn't want to link to mobile specific or mobile optimized resources.

>>> with that said, we also made sure we did a lot of device testing. Since this is going to the public, we actually don't know. There are so many different kind of readers out there for you there are many different devices that have QR readers. We did as much testing as we could. We certainly didn't use what would be this pile of phones on a slide here, but we did test on as many devices as we could get our hands on. A lot of the new phones coming out, the iPhone for, some of the new Android phones, have excellent cameras and excellent resolution and good support. A lot of the older phones, and I can speak for my in particular -- I have an older iPhone. We first started working with QR codes, I noticed that mine was failing on quite a few of them. We try to simplify the process because we didn't want those things to fail and then not close. Speaking of that, we did want to try to make our QR codes stand out a little bit more than just the black-and-white. This is a QR code for our AIDS campaign. It works pretty well. We have been able to change some of the colors and actually associate the brand for AIDS.gov. Here are some of the resources we use just for creating the QR codes. One thing we did not do in terms of our QR code strategy was we didn't actually endorse any specific readers. We realized since they were going to the general public, we weren't going to be able to necessarily require that they use a specific reader or specific device. We didn't want to try to do that. Really, there's the quality that is fairly inconsistent from what we saw in our own testing. So we didn't actually make any recommendations on that. Finally, I just wanted to go over very quickly, we did use an associate analytics with each of the QR codes. Since these are going to the AIDS.gov website, we have Google analytics on the AIDS.gov website. For each scam of those barcodes, we do actually attach a couple parameters to the end of that URL so that we know someone came from the QR code and was actually using their mobile device to scan and then look at the much aeriels we were associating that code with. So you see we just attached it through so that we knew it was from a QR and then that would be for material. This was in one case from someone who had a business card. Being able to track these resources in Google analytics allows us to find out how these are being used and also be able to track which specific media is being scanned, whether that's a business card or some of the other resources we have including fact sheets related to HIV, AIDS campaign as well as some others. So with that said, here is a bunch of AIDS.gov resources. If you want to take some time to learn more, we have actually a QR page on our using new media section. I will actually put that up on the go to meeting to make sure people can go there for more information. But I am all done now and I'm going to go ahead and pass it off to Joe for the next session.

>> Thank you. One moment while we get Joe Barber squared away. I hope you all are enjoying our webinar. Jeremy, that was really fascinating information. Actually, while we are waiting for Joe, we did have a question, and that was for you. How much our QR codes being used?

>> That's a good question. It actually has depended. It's depended on the materials that we associate them with. So I showed an example of the business card, and that was actually a pretty unique case. We haven't actually had those used to much. The AIDS campaign is just getting underway so we haven't seen a lot of usage of that yet, but our materials associated with fact sheets have actually begun to be used a little more often. As far as a percentage of our website traffic, they don't exceed 1%. So it's not a significant source of traffic to the AIDS.gov website. I don't think that is necessarily a concern in the long-term. This is more of an opportunity to maybe get people connected to AIDS resources that we wouldn't otherwise have go there. So we do think that this is something we are going to measure long-term and see if it does gain traction. As of right now, it does not represent what we have seen on our webcast.

>> Thank you, Jeremy. Now we will have Joe Barber. Joe, take it away.

>> Thank you. Jeremy, that was a great job. Great background and some really good best practices therefore everybody. I appreciate that. What I want to talk to you about now is the potential that exists for you and your allies in QR codes and one-to-one applications, so one-to-one QR codes. What Jeremy just show you were great examples of where we are going out in the mass market and trying to reach many individuals with QR codes. Now we are going to talk a lot about more and look at what it means to try to communicate in a one-to-one manner with those folks using

data-driven individualized, personalized QR codes to create these personalized dialogues. I also want to -- as we're doing that, I want to talk about the data security issues inherent with that picture we are aware of that and addressing those is a go forward doing this. My name is Joe Barber. I am a QR security analyst and also the chief QR officer for coffee. I work primarily our clients. We are going to share a little bit of our information with you today. This is very exciting stuff. It's got a lot of potential, but it's stuff you have to be careful to make sure you are doing right for you as Jeremy pointed out, there's a lot of best practices that need to be followed if you want to make sure to have the maximum impact and really reach the full value of this technology. My slides are not moving. There we go.

>>> And little background on who COPY is. We are a 30-year-old company and have been focused in the industry working with clients that are doing high volume, high demand data driven transaction outputs. So think about statements, think about high-volume direct mail, think about all of those types of one-to-one communications. That's where we have really been focused on. In the past 20 years, we've been working with these clients to help them with their barcodes to bring those to these high volumes. So we have been working with data matrix and PDF for 17. Over the last five years, we have gotten into QR codes and started to use them as a real communications tool where as before the data matrix and stuff was just being used to control. So our clients include the Internal Revenue Service and some of the world's largest enterprises like Citicorp and AT&T. We've also worked with state governments like the state of Wisconsin and state of New York and others, just to name a few.

>>> What I am going to talk to you today about is, as I mentioned, one-to-one QR codes. That relates back to our code to our product which is a family of products that we have just forward this highly secure data driven one-to-one communications concepts. With that, who should be interested in one-to-one QR? Why should this matter to those of you on the call today? Welcome anybody who is engaging in a 1-1 dialogue -- in a one-to-one dialogue has the opportunity to leverage and capitalize -- and capitalize for our QR. If you are trained to communicate with individuals, which most of us are, we have constituent Pats players whoever they are, we want to be able to reach them and communicate with them on a personal level and not send out the generic as it traded at two should be interested in one-to-one QR. Once again, this is going to be database driven. We are going to be talking with individuals who need to know who those individuals are in order to capture the communications with him. Anybody who is in an organization that has these databases of individuals and wants to create these one-to-one personalized QR codes that go to the personalized QR -- QR codes and creates dialogue, that is to this is geared toward. Usually these are done in high-volume environments. Of course, people who are concerned about data security and wanting to make sure that we monitor that personally identifiable information and use it as possibly. That's what we are going to be talking about today. So as I mentioned, the QR product that we have is a one-to-one QR code version two. There several products out there that do this. One of the things that we have done developing this tool and developing one-to-one QR codes and working with our clients around the use data-driven barcodes is we have helped them to address the data security issue by making sure that our solution operates behind the firewall so you don't have to worry about sending your data out to a third-party provider or third-party code generation tool and having to work about the chain command. One of the things we think about is we are looking at these one-to-one codes. However, going to protect and manage that data as we go along? So what goes into creating this one-to-one QR or this one-to-one data-driven QR code? First, obviously, you have to the database of people that you're trying to communicate with. We all deal with that on a daily basis. We have to integrate that data into a print stream. So we are going to create a letter of voters or some other type of document and we are going to integrate that personalized data into there. Then we need to take that personalized data and use it to create a personalized URL. As Jeremy mentioned earlier, one of the things we need to be very careful of is the length of our URL. When we go through this personalization process, oftentimes we need to shorten those URLs to make sure that the density of the code that comes out on the backside is manageable and readable by as many devices as possible. So once we have got that created, we then take that personalized URL and we want to encode that into the code and return it back to the data stream for printing. We want to be

able to do all of this process in a very secure manner where the passing of this data, the handling of this data is done securely and we need to do it very quickly because we used -- we are usually talking about Harry gushed about very high volumes of statements and other correspondence we are sending out to our various constituents. Being able to do this accurately so that the code is readable, being able to do it quickly so the processing times are not slow down and being able to do it in a secure manner with this personally identifiable information that we use to create the personal Q car -- QR code that is handled and protected in a responsible manner.

>>> So another graphical representation here. If I was sending out a letter to somebody, in this case Joe blog who is our sample person, I am going to take that information. I may use his account number in the letter. I may use that combination of his name and account number. I can use any company shall personally identifiable data elements that I can store my database to create this QR code which will then get past right back into my composition tool, whatever that is that is creating this level. That will render that QR code the document so that anytime he scans it, if he responds I now have a track and record of exactly when he responded, how he responded, presumably through the QR code. He puts hand it on his PC if you were so inclined, although that is very rep. However, he does that, I'm going to be able to track all that information and be able to follow that communication and I'm able to deliver him to a personalized URL on the backside that will tell him exactly whatever it is that this call to action in this letter was. In this case I've created a fictitious example of a collection letter that we are sending out to the individual. We are wanting -- or we are telling them that we've got a discrepancy in the return that they recorded versus information they had previously reported to us. We want to take the Berkeley to that return and allow them to look at that information and compare what they have previously reported and be able to resolve that discrepancy. This QR code was linked directly into his account at our fictitious government agency and taken directly into the information so that would speed up the process for him and make it easier, thereby, making it more likely that he would engage with us and give us the full analytics, when he did it, what he did to correct that issue, and then a follow-on conversation or dialogue with that individual based on the particular spot that he took. At the end of the day, what is really all about is taking these one-to-one communications that we are already using today and enhancing them with a QR code that is personalized for that individual that will take them directly to the information of relevance for that individual. It generally will include some personal information targeted to them and allow us to monitor that dialog and have the analytics tool really monitor that conversation and then customize the follow-on conversations that we have. Straka talked about a fictitious example. Some other application ideas that you can apply from this technology for these one-to-one type communications. Any type of statement or notice is a great example. Anytime you've got a payment that you are trying to collect and process, you can use a QR code to facilitate that payment. You can also use it for counterfeit protection to identify and make sure that you can identify as is typically a form or document that is going out as being an original and being authentic. You can use it for response processing. The Canadian government actually used this on their passport applications so that as you are typing in information in the form, it is building a dynamic QR cord -- code on the form. When they get it back in, they can just scan it and it automatically uploads all that data. It's a great way to increase the efficiency. ID cards and licenses are another great example. We've been working with many states over the years with the implementation of PDF for 17 on drivers as part of the Homeland Security initiative, but there's a great opportunity to add this to all manner of other types of licenses so that somebody with a license for cosmetology could go in and scan it to our code and be taken into their portal to reduce their license or something like that. Really the options are limitless. And any kind of direct mail or other mail communications that we have with individuals is an opportunity for us to enhance the communications effectiveness of those pieces by including that one-to-one QR and turning that static one-to-one piece into a dynamic ILOG with that individual communicating with them through that cell phone which is always on, always connected, always at their side. So that's what the real power of this one-to-one QR technology is is being able to take any one of these traditionally static one-to-one communications media

and turning them into this really rich, interactive dialogue, if you will. Obviously, there's probably a ton of applications beyond this. If you will typos in an sentiment, we'd be happy to talk directly to them at the end of the presentation in our Q&A session. If there's anything else you want to ask me about, if we run out of time in the Q&A, you can always reach me at [indiscernible]. I'm happy to answer those questions. Anyway. Appreciate the opportunity to be here, and I'll hand it over to Boston now. -- Dustin now.

>> Thank you, Joe. That was fascinating as well. While we get Dustin Reddy, we have a question that came in for you. Actually, we have two. Can you give an example of QR codes used for the IRS cracks --

>> No, because it has not been put into use for you to the project that we did with them was a run of PDF for 17 application. They are working on some initiatives but they have not been released to the public yet. They went okay, Joe. Think in -- thank you. Dustin, we are ready for you. Take it away.

>> Thanks for the opportunity to get to present. My name is Dustin Heisler. I was the former city manager and chief information officer for the city of Maynard, Texas. Very small community east of Austin. We did some really interesting things with QR codes. I want to share some of those examples with you today and answer any questions that you may have. Let me get this presentation fired up. All right. First, we will start with what a QR code is. I think you probably seen them popping up all over the place. The other day I was in Best Buy and took this photo of a QR code on products that you could scan a product and get more information and reviews and other details about the product itself traded Google has been using them or you may notice it when you go to your favorite restaurant. You see a QR code on the outside and even Facebook is using QR codes. It stands for but response barcode. It can be read by most newer model camera phones. An interesting fact is you can actually build in error correction up to 30%. You can have the code then the wise. In Maine are we had a few vandalized and you can study the code. It's actually encoded multiple times within the barcode. When you embed a URL, use Google analytics and you can then tell information about how many times someone scans the code and effectiveness. So how it differs from a traditional barcode, a typical barcode you see in the source. It's a series of numbers that are encoded that typically related some type of products. A QR code you can invent all different kinds of information. In the example I'm going to talk about today, what we did is embedded URLs. URLs are specific and unique so we were able to measure the effectiveness of the campaign after the campaign itself.

>>> The way it started was actually trying to find a document management system with limited resources. We were looking for different barcode standards that were open and QR codes are one of the standards that is actually open. We started experimenting with them for document management systems. The city manager and I didn't realize the potential to use these for interaction was far greater than just document management. This provided a mechanism for citizens to get information on demand as opposed to the traditional bulletin board model of information. We really don't know whether or not information was received or whether or not someone had questions we started experimenting with it. We created something we call the digital stop sign. You don't actually get a ticket for running. There is three ways to read the signs. Scan it with your cell phone, use [indiscernible], if you have in your fellow communication device, you can touch her phone and it will deliver the same content you get when you scan the fine. It also has a unique serial number that you can go online, enter the serial number. You direct it to the same concept that was provided by scanning the actual signs themselves. So they are spread throughout the city of Maynard, and they are still there today. They've kind of become a digital stone. They get a lot of interest. A lot of people come to see these QR code scattered throughout the community. Let me show you a couple of examples. This is a water tower that actually featured in Gilbert grape. It's no longer in use. At the base of the tower we put QR code with additional history about the tank. What was built, how much it was costing, and this provides another way for citizens to connect to some of the history and also provide a way for tourists to connect with some of the history with the city of Maynard as well. This is one of the parks. This is a 1 acre park. They call it a smart part -- part. In addition, if you scan this code you can make a reservation. It gives you history about the park is named after and some of the things that you can do there. This is one of the historic homes.

This is called the glitter mansion. In addition to some of the city uses, we wanted to further add to the Texas historical than park that was already blanketed throughout the city of Maynard. This is a code that was actually added to the marker on his house. When you scan it, you get additional information about the home, pictures of the home under construction, and information about the owners today and when they are open for touring the house. So lots of really interesting facts that try to make history a little more interactive. Again, providing information on demand based on scanning the code.

>>> One of the most interesting use cases actually came out of a wild experiment you like most agencies, you are required to put a sign up that says this is your work. You are using capital funds or taxpayer funds. In addition to the font on the signs, we wanted to do something that actually allows the measure. Our capital construction projects, the first one was a half-million gallon water tank. We added a QR code and said you could use this code to get additional information about this project. It wasn't just the blanket information but we also provided the purpose of an elevated water tank. A lot of times people don't realize that these elevator tanks actually add to the water systems. We need to make sure this is understood why we had to build this water tank using the funds. But the cool thing is we also tied in real information about how much money was spent here today. When it was scheduled to be completed. As with most government projects, they tend to deviate from the timeline set. We wanted to have a way that citizens could scan the project and see up-to-date information about what was going on with that project and what was going on with their bond money. So this is the way that we can add that layer of transparency on the physical object that they never had access to that information four. Our use expanded into the open government initiatives. This became a system of asset tagging.

>>> So you are probably wondering how much this program costs. For those of you familiar with the example, again, with a limited budget there's not a lot of funds that we had to experiment with. The first days was \$400. The only cost associated with the program was the cost of printing QR codes themselves. If you print them on a metal sign, it's .5 to \$50. Strike now I am going to talk about how you actually read these QR codes and how you can make some adjustments as well. There's a couple different meters. Again, the city of Maynard didn't endorse any of these readers. More than likely you will search a QR code and you will get a couple meters that will probably work for you. In addition, there's a link on the website. You can go to the link or send me an Intel -- go to send an e-mail. I'd be happy to help you. So now how to generate a QR code. This is an example of something called super crossing. I put the link in here to the training sessions. That's the only thing that I've put in there. All I have to do is click the generate button. I now have a QR code that links to this training session. Again, I didn't have to code anything. I didn't have to know any type of programming images. I can take this code and right-click on it. I can say that as an image. I can send it to a graphics shop. I can put it in an e-mail and I now have a code that links to this training session. All through an online web browser with no technical requirements. There's a couple different ones you can use. As I mentioned, the Procrustean is on it. Period they are all free. They are easy to use, and they are great to experiment with. When we first started using them in the city of Maynard, the QR codes were littered throughout City Hall linking the different things we were using to test appetite. I encourage you to print them on a piece of paper, experiment with the organizations and try to uncover new uses that actually solve relevant problems. We found that it lowered the amount of information we were getting with tagged objects that were commonly requested for information. This is just another way that you can have that layer of transparency. You are not going to replace information request. It provides another mechanism. So some of the future uses that we were experimenting with before I left and they are still experimenting with today, one is semantic and audible. This is the first semantic related job. You can scan his pet tag and get information about this animal. You get the vet records and other information from city records that the owner has a lot to the public all from scanning this tag you what we found this useful for is mostly for officers when we were covered in animal didn't have a microchip wanted to scan the animal to find the right owner. It will cost a lot of money for the officer to take it to a vet clinic to have the animal tested for a microchip. This code allows officers to scan animal, allow the most up-to-date

information and return the dog to the right owner. This is something that was highlighted at the University of Tokyo, Italy as part of the project. If you want any more information about QR codes, feel free to e-mail me after this presentation.

>>> Another thing that we are looking at is looking at ways to allow individuals to provide location-based feedback. What say we have one of these codes within the community treated if someone scans that instead of just consuming information, we want to make it a two-way street that they can use comments, leave ideas, leave feedback that can then be at a gated and taken back to the community to say, here's some public comments on this particular project. We need to take these and make sure the council is aware of them and that they are available to the elected officials in the community. This is where we see the future of QR codes where it is no longer a consumption of information that you can measure effectiveness of how many people are consumer -- consuming it. It has feedback and comments to a particular geographic location. They have a comment and question and they have something different. They can do so on that and it's tied to that physical location. So there's a lot of really exciting things that are starting to take place. It's been great to see how this technology has expanded above and beyond whatever it was doing when we started this program. We did this in 2008. It was great to see how with some of the examples the technology is pushing and expanding these use cases.

>>> With that, I think we will open it up for some Q&A. I will pass back screen control.

>> Thank you, Dustin. Now it's time for the portion of the webinar which I know everyone has been waiting for, which is the Q&A. So with that said, let's get started. This question is actually open to all three of you, so feel free to chime in who wants to go first. Can any of you provide further clarification to the audience on how this would be helpful for them? Of a find it difficult to believe that a majority of an audience who is receiving direct mail would be using QR codes. You have any data on this?

>> This is Joe Barber. I will tackle that first, I guess. The smart phone penetration rate is somewhere right around 50% right now. In other words, over half of the people in the country are expected to get over 50% by the end of November. So over half the people in the country are going to have smart phones in their hands by the end of the year and ramping up too close to 100% within 2 years. So the answer is yes. There are a number of people, a critical mass of people out there, having smart phones is clearly there. I think that is validated by the fact that we see so many brands in the marketplace jumping on board with this from Target to Starbucks, you name it. There's a list of brands who are using QR codes now that is probably shorter than the list that is using them. I think that gives you a pretty good idea of validation that they believe that there is a critical mass necessary out there to make this a viable communications tool.

>> I would agree with that. Just to act on top of that. QR codes are meant to replace existing print media or any other form of communication with constituents or customers. They are there to complement and provide another mechanism for people to get information on demand in a very quick and easy format. If you're reading a magazine article or you see an advertisement that's interesting. Having to remember the URL, you could just scan it and take it on the go. The same is true in government. Skin but that's probably a good synopsis of the overall effectiveness for you again, the city spent \$400 on the first phase of the program and the benefits that came out of it were great because it was just another way that citizens could plug it and engage in a format that they were compared with doing.

>> Thank you. The next question is open to all of you. What are some concerns that you have about spoofing. For example, someone physically passing their QR codes over yours and directing the users to a middleware or virus reading URL instead of your URL.

>> That is a great question. This is Dustin here. I would say that things like with AIDS.gov having some type of object on top of a QR code or some type of algorithm and added that creates an image within a QR code itself is probably how you try to secure QR codes. Another thing we do is encourage people to look at the URL before they go to them. A lot of readers have that option to do a scan of code and it will pop up with a URL. It's something you may want to take a look at.

>> I would reiterate that. That was our main approach was to really make sure that any QR code we displayed was framed with any context of something bigger. Again, the complementary aspect of the QR code. It's a very good question and I think when it needs to be considered. I think that makes some good points about you can do some things to kind of mitigate that. You won't be able to 100% full proof -- be foolproof, but I think you can do a lot of things that are reliable.

>> Thank you. Have any of you seen QR codes being used by smaller businesses to advertise their products? If so, how? In it absolutely. This is Dustin here. One of the things that we did was work with some of the small businesses to the Chamber of Commerce to teach them about the technology. Again, if it's a low cost technology has significant value from a marketing perspective for small businesses. Some of the examples that come to mind would be in real estate. We hope to train some of our real estate to put QR codes on there for sale signs that allows them to measure hits and effectiveness of their campaigns that they did. In addition, providing information that you can't typically put on a fine. You could provide a video walk to -- walk-through. Other things that really cut down on the amount of time they spent doing those types of activities and allow them to focus on just measuring the success of their campaigns.

>> This is Joe Barber. There's another of restaurants and other locations such as those that are using QR codes to provide links to like them on Facebook, to check in when you are there, and to utilize them as an access for social media. I see that a lot out of the marketplace. What I think you'll find is once you go through a presentation like this, your particular activation system will come on and you will be surprised at just how many places you will see QR codes that you didn't notice before but now that you are aware of them, you will come to realize that there are just a tremendous number of businesses both large and small who are recognizing the value of this technology and are utilizing it.

>> Thank you. Jeremy, this next question is for you. Is the AIDS team delivering any other content besides the URL? Are their calls to action or something that people get by in gauging with your QR codes?

>> We have sent people specifically to our web resources right now. One of the other things we're doing is developing an app for facing AIDS. Eventually, that will have a QR code that will take for people to download it in an app store. But we are not currently linking to any kind of downloads or anything like that.

>> Thank you. The next question is open to anyone. In branding a QR code, is there specific zones that the image has to fall in asked not interfere with the URL that mission?

>> Based on my knowledge, that's going to depend on amount of error correction used for the QR code at the time. That's something that's adjustable. It goes up to 30%. The biggest thing with QR codes is obstructing the contrast within the actual black and white. You can view different colors, but you always have to have some form of contrast on at least 70% of the codes and then depending on the error correction that will allow you to place an image on top of it.

>> We actually at AIDS.gov use the 70% -- the 3270% air correction as a model for how we designed it. So the little ribbon, for example, doesn't cover a whole lot of space. It just kind of augments the rest of the QR code. There's enough contrast to deliver the rest of the message. That's kind of how we began our approach to branding those QR codes.

>> You do have to be careful not to cover up the three big boxes that you see in the three corners of the QR code. Those patterns have to be seen so they cannot be obscured by your local area that you can rotate the code in any direction you want so you can place those boxes in any one of those corners. I've seen a lot of creative applications with logos on top of the QR codes without any problem or without any need to cover up the box. You can also go off the QR code with your logo and be creative in that way. So there's a tremendous amount of flexibility with the air correction built-in to handle that.

>> Thank you. This next question is probably the million-dollar question that everybody has been wondering. How do QR codes become available bucks what purpose do they serve? To private companies start making sure our codes are available bucks in it I will take a crack at that. This is Dustin. I believe that they were first patented in Japan in 1991 and the company that did it at the time decided to go ahead and open standards which allowed other vendors and other companies to start to leverage the technology in an open format. As far as what created the need in the

U.S. or what brought it over to the U.S., I'm not sure that that has ever been pinpointed exactly. It was never really I believe intended for marketing purposes, even its original creation I believe primarily for inventory management. Normally on a smaller scale than you see secure codes today. However, the technology is widely adapted and has started to really become ingrained in global marketing efforts and being used in a lot of marketing overseas as well.

>> And this is Joe. Everything Dustin said is correct. It was a vision of Toyota that started them using them for inventory tracking in their plants over there. Where it started to grow is the communications tool with the Japanese and the early evolution of the smart phones about 10 years ago. Folks over there realize that the smart phones would be a great tool for scanning QR codes, so they started using them in marketing there. So the migration started here about five years ago when the first smart phone started hitting the market. It had already been used so pervasively in Japan, it was a natural for some of the global brands to pick up and bring it over. Then the global brand started to throw out, it became something that everybody started to realize was a potential. At the end of the day, what it really does is provide a hyperlink from the physical world to the virtual world. All of the various mediums that we've traditionally communicated through in the physical world can now be connected to and can now leverage the power that the digital world brings to you in terms of being a link to video to print or being able to link additional information to a static document. Nobody wants to send out any more pages than we have to. We are all trying to do that more effectively and efficiently. That's exactly what the QR code does area and it does it in a way that actually gives you even better analytics, better measurement, better picture of that communication into what is going on. So that is why it has been picked up and really leveraged. Of course, that paradigm that applies in the public sector or in the private sector and commercial sector also applies to the public sector as well. We are all trained to find ways to do things better, more efficiently. QR codes are certainly on that.

>> Thank you. What about uses for multilingual user's? Would anybody like to try to get that want to try?

>> AIDS.gov, we actually do not have a whole lot of Spanish-language resources right now. However, I do think Judge in from not only the mobile adoption rate -- I guess in this case its Hispanic users would probably the best example in the U.S. of people who are adopting smart phones at a more significant rate than the general population. We will be more likely to use something like that. I think also, the QR code is in and of itself more bilingual so it doesn't require any kind of comprehensive and other certain language to be able to use it. So I think there is some advantage to doing it. It has to be, obviously, in the context of that larger kind of message and stuff like that. Right now we are actually -- we do not have any specifically targeted available populations.

>> Thank you, Jeremy. Would anyone like to answer before we move on? Okay. So the next question. At the complication level of the QR code actually have any effect on the user experience other than looking busy? Say that this is Jeremy. Actually, I would say it has a lot. If you cannot stand that QR code, and we tried on a lot of different -- we did a lot of testing, I should say. So if your skin doesn't work, if you don't have a QR code or you don't have a camera on your smartphone, and it's going to depend on individual sites, so I think we are talking about a large user population here. We are talking about a lot of people who could be using this. You're probably inducing some frustration to folks. Maybe when you first start of the testing out, we had maybe a 50% success rate. At first when we were just testing on our own to see who's phones actually worked and who's phones didn't, that was kind of our benchmark for for starting. We realized pretty quickly that we needed to be using something a little simpler and less complex to be able to be reliable across as many devices as we could possibly find.

>> And just to tag onto that. I would say that it's kind of similar to typing in a long URL. The longer the URL, the less chance you have of getting it right, the more dense the code, the less chance you have of being able to scan it easily. In the same way that you want to keep your URL print and expect people to be sure, you want to keep your QR codes less dense so it has a higher success ratio for the end recipient.

>> Thank you. For Jeremy and Dustin, did you promote your QR codes through other communication channels is, for example, social media? Or did you let them speak for themselves?

>> Dust in here. Yes. We looked for other technology meetings and even off-line meetings to promote the campaign. One of the things he actually did initially was run a series of ads in the local newspaper providing helpful hints as it was about a five-week campaign. At the last week of the campaign we actually unveiled how to instructions within the newspaper.

>> Yeah, and we actually haven't singled out our QR codes for use in general. I think one thing we have done is we have shared them with HIV AIDS community organizations to be able to use and point to AIDS.gov resources. So there are quite a few of those. We do have different press releases and fact sheets and things that smaller, perhaps local or state government would actually use in their own program. It has trickled down to a certain extent. We are still rather early in the process, but we haven't done any specific promotions to say, look at our QR code area and I think Dustin's example is just a little bit different from ours, given that they were doing some specific stuff with some landmarks and things like that. I think the promotion was appropriate, but we haven't done a whole lot of promotion on our own.

>> Thank you. The QR codes have a shelf life? Can have multiple QR codes with the same URL? In exit you can have multiple codes that point to the same URL. If you go to one of the online generators and you type in CNN.com, it's going to generate the same QR code. As far as shelflife, it really just depends on like if you are embedding a URL. It depends on a link that it's going to. So the permanent link that is an article that's going to get archived and probably within two years or so, that link may change. If it is a domain that you control, you just may want to be conscious about many adjustments to your URL or domain structure online so that those links will stay active. In Antioch. We generated multiple QR codes for some of the same links based on the fact that we were adding some length parameters at the end of some of those things just so we knew where they were coming from. For example, I think the example I showed on one of my last slide showed that there was a link to our mobile site and it had a QR equals and materials equals two. We also had ones that were distributed that were perhaps fact sheets. We do have some promotional posters related to awareness based, so we have seen all of those come in. They actually go to the same URL, but they are distinctly different because they are on different pieces.

>> Just to add to that, in the world of one-to-one QR codes, it's not unusual that if you are sending out, you know, let's say a recurring monthly statement that you may have an offer one month and then the same URL can be reused the next month. You cannot offer is that you expire and then get replaced by a new offer. So let's say a monthly statement was tied to that URL. That way if I scan my June statement and I want to get into my current month information, I could still do that through the same URL. The URL doesn't have to expire, so to speak. It's the content behind it that's driving it and just the change to the current.

>> Thank you. If you use QR codes on city resources, how will you manage changes to your website that might change or replace the pages that your codes are linked to? And this is for anyone.

>> I understand the question correctly, how do you account for changes if you are using them on city resources. I would say that you just want to make sure that if you create an ID or entity for a city resources in the QR code, if you are going to print out a bunch of tags you are going to use, you probably don't want to change those. One of the things before I left that we were doing was trying to create semantic IDs for objects within the city. What that means is you would create in essence a landing page for an object you link to the code. You can add different layers of information on top but you still have the same landing page for the QR code itself. I wouldn't recommend changing the actual landing page or URL structure because that could get confusing with having multiple objects linked.

>> Yeah. For AIDS.gov, we really focus on kind of our larger campaign related items, so we have our facing AIDS campaign. That's just a very simple link to a page that's going to be there for the foreseeable future. Same with our HIV service provider locator. It's the same thing. Again, it's just going to be located at AIDS.gov. The URL is not going to change. We enjoy I ain't some consistency in that respect. We haven't really focused on linking people to what would be kind of more obscure pages on our website that may not have as long of shelflife. Again, we may be unique in that respect as well. I think there are a lot of other uses where that wouldn't be the case.

>> Thank you. This question is open for all three of you. If any of you are familiar

with near Field communications, can you compare QR codes without?

>> So with the NFC devices that we were using in Maynard, the difference is the QR code is visual and requires recognition by a cell phone or some type of image reading device. It's not wireless technology. It's imaging technology. Your phone looks for contrast between the black and white or whatever the colors are and decodes the image itself. Within NFC device, this is typically wireless communications done through passive RFID. So it does not have a battery. It's not long-range. It's actually powered by the radio waves themselves. With the information wirelessly through an application. If your phone is equipped with an NFC reader actually.

>> Okay. Thank you. Can anyone explain -- anyone explain?

>> I'm not sure what they mean by them will be codes, but with all of these QR code technologies, as Jeremy referred to, one of the best practices is to make sure that you are going to a Moby device. Your codes always need to resolve to that webpage. So your codes always need to resolve by something that has been optimized for the global -- for that mobile platform. Whenever you see people referring to Moby, they are talking about a site that has been optimized for the mobile platform.

>> Thank you. I actually have a two-part question. What is the best way to use Google analytics? Do you link analytics to the QR code come over to you at analytics to your webpage?

>> For AIDS.gov, we link the analytics to the QR code itself. That way we knew if someone was arriving there that the only time they were going to arrive there that actually passes a parameter to the webpage. Anytime you have a question there or something like that, best is basically an extra parameter that's going to resolve to the same webpage as long as those directions that preceded are the same. So we have always just focused on associating those specific variables with the QR codes themselves so that we can drill down within our analytics software so we can just search for those specific visits and find those pretty quickly. So that's been the way we have done it. We've kept it pretty simple just by using a couple of variables just linking to the materials. You know, the material used to promote the QR code and also just saying that the QR code was used when it was linked. Spirit Jeremy, I have a follow-up question for you. Do you have a privacy impact assessment statement that you could share with -- that addresses the privacy concerns on what user data is collected and used by the third-party QR reconciler quest in most cases, [indiscernible]. A Mac that is I think a good question. That was something we talked about when we initially began thinking about using QR codes, which was the fact that with smart phones, you are relying on a third-party. It's not like -- I wouldn't even necessarily a considered browser being a third-party in the sense that some of the QR readers that are out there are. That is actually why we have been reticent to necessarily endorse any QR is specifically. We don't actually have a PIA associated with the QR code and the use of QR codes. I would actually -- that might be a resource worth looking up. I didn't catch the end of that question there. There was an actual URL associated with that. Was that a specific PLA related to QR reader?

>> It seems that way, but we can e-mail that to you when we send out the Q&A document and then you can address it with that person.

>> Yeah, that would be great. It's something we would like to follow-up on anyway.

>> Okay. The next question, and this is open for anyone, can anyone of you address benefits of using QR codes over tax? -- overtakes a.

>> I can take a swing at that. The biggest benefit is that QR is based on an open technology, and it's a technology that you can have total control over where as the tag is a Microsoft technology that Microsoft has full rights to. It's free for now, but they have a promise that it won't be free forever. They have earned analytics. You use a QR generator and you are driving your URL. So there could be some concerns over the fact that they get to continue to aggregate and use your data. Most importantly, every individual user has to go out and download the tag reader and the tag reader is a proprietary reader that only Microsoft tags. Where the QR reader is something that reads every QR code out there. So they are just more ubiquitous and more available. I'm personally a believer that open technology is going to win at the end of the day. It's pretty clear to me that that is going to be the winning technology. The other factor is with the tag, because of the ability to use the colors, you could actually make it so it's very hard to recognize. With the QR code, there is no doubt where it is, what is there for, and what the user is supposed to do with it. So it becomes a much more readily identifiable marker for interaction

for the recipient.

>> Would anyone else like to comment before we move on? Okay. So the next question is in regards to printing material and QR codes. With the QR code added to printed materials, were there any issues that any of you ran into that people should be aware of?

>> This is Dustin here. I think one of the issues is going to be around the size of adding a QR code to printed material. It's just making sure that the smaller the QR code is, the more pixelated it could become also based on the URL. So make sure that the QR code is obviously at least an inch by-inch. It is kind of what we use as a standard in Maynard, which would allow for phones with less resolution on their cameras to still be able to read it. Also make sure that your URL are within a reasonable character range so they don't become too pixelated when printed out.

>> I would just reiterate that. Our approach has always been to test often and also test not just the QR code that you generate that actually when you go ahead and print it out wherever it is. So whatever piece of promotional material that you are associating it with, tested on that piece of material before you go ahead and start distributing it and test it with as many devices as you can get your hands on it I realize it's not always easy and maybe you only have a couple different -- maybe even office maker or people who could do some of that testing for you, but find as many devices as you can. Test it as frequently as possible so you have established that is reliable as much as you can possibly make it.

>> Thank you. From a customer service perspective, can any of you discuss the feedback and comments when using QR codes? Is the person directed to a website with a fill-in form cliques

>> I will take a shot at that. Where they are directed to and what kind of form they are directed to is entirely up to the campaign design team. Now, in terms of the best practice on the mobile platform, you want to try to use as many drop downs or radio buttons to kind of response -- and the sponsor mechanisms as you can. Free format text is always hardest to write in. That being said, it can be done and can be done effectively. It's really depending on what the response -- what type of response you are trying to solicit, what kind of call to action you have, what type of information you are trying to get as to how you do that and what kind of tools you use. Any of those could be done in a mobile friendly environment and be done effectively on a mobile platform.

>> Okay. The next question is actually something that doesn't reflect touched on dealing with cost. Had there been any cost-benefit analysis done by any company that any of you may know of to show the tangible benefits of using QR applications?

>> This is Dustin here. I know there are a few out there. None that really come to mind, but if you google QR code, I'm happy to piece together a couple links. I know there's a couple different infographics that I saw that that kind of broke down a couple campaigns. So I will dig out to find those. I don't have the names offhand.

>> And I would add to that. The thing to keep in mind is that QR codes are not a communication medium in and by themselves. But they are is a tool to enhance other mediums. So I have seen QR code campaigns that were put on various direct mail pieces that got no response. That same direct mail piece without a QR code was going to get no response to begin with. I've seen very good direct mail pieces that have added QR codes and same percentage. increase on those anywhere from as low as three to 5%. Meaning some of them had 30 plus% increase and response rate. So there's all kinds of factors that go into that. But the quality of the messaging, the quality of the call to action, and the demographics of who you are sending these to are all factors that go into effect in response rate with or without QR codes. I would keep in mind that they are not by themselves for bad content.

>> I would agree with that. I try to maybe point some of those out at the beginning of my presentation at a QR code is probably not going to go very far in terms of some kind of ROI, but I think if it's attached to something that's meaningful and has context, it's going to deliver a lot more value.

>> Jeremy, the next question is for you. Does color matter when using QR codes? What about the red ribbon? Was that just placed over the QR code? A Mac that's an excellent question. The AIDS ribbon was placed over that. I think it was mentioned in the call as well. There is about a 70/30 ratio where you need to have at least 70% of the QR code readable and that contrast has to be there. The color contrast has to be there. And you don't want to cover up kind of the larger nodes on the QR code. You will see those kind of larger squares. You don't want to cover those up.

Those create the orientation for the QR reader to be able to scan that code and read it properly. As long as you are kind of keeping out of those things, you know, the AIDS ribbon is totally appropriate only because it is very small and it's almost transparent and of itself. So that was kind of an easy branding opportunity for a period I think some other locals would probably have a tougher time doing it. Certainly, we took advantage of it because we thought we might be able to make it work, but we did it actually having to test it quite a bit and not knowing from the outside that it was necessarily going to work, but we felt like we wanted to brand it and make it stand out a little more.

>> Thank you. The final question is for Jeremy. Feel free to chime in if you have any thing to add. Our QR codes finally accessible?

>> To be perfectly honest, that's a good question. I think it depends on the device. Obviously, we are using -- you know, you are using a third-party application to deliver it. That's going to be somewhat -- but they not necessarily be the case. We've attached most QR codes to what would be, essentially, print materials. I think right there you're actually looking at these print materials would definitely be a challenge for folks who are able to see those print materials in and of themselves. So I think there are some challenges there. One thing we don't do is necessarily convey information through the QR code that we wouldn't place somewhere else. In essence, what we make available through the QR code is not exclusive to the QR code. We are not doing anything that isn't available somewhere else on the website or isn't available to someone using a normal browser or using some kind of assistive technology. We are aware of those kinds of concerns. I think we don't necessarily do anything with those QR codes that would negate somebody able to use our services.

>> If no one has anything else to add, I would like to thank everyone for attending this webinar this afternoon. Thank you, Jeremy. Thank you, Joe. Thank you, Justin. We have included a link in the chat box to our survey evaluation. Please take a moment to give us your feedback. We also have upcoming webinars, but if you will visit Web Manager University, you can see all the fascinating things we have coming up. We will also be sending back out the question and answers that were not addressed during the webinar, so if you question if you didn't get an answer, don't worry. Don't receive it within a couple days. With that said, everyone have an awesome afternoon. Thank you.

>> [event concluded]