

Webinar Series

Mobile Implementation Lessons Learned

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Speakers: Anne Hunt, the Compliance Officer, Washington Division of Children, Youth and Families

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Neil Edgin, Child Welfare Application Director, Washington Division of Children, Youth and Families

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Tom Kine, Director of the Microsoft Application Development Division, Minnesota Information Technology Services

Michelle Selinger, Child and Family Manager, Carver County, Minnesota

Mark Anderson, IT Director, Winona County, Minnesota

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Operator

Operator: Welcome and good afternoon. Thank you for standing by. I'd like to inform all participants that your lines have been placed on a listen-only mode until the question and answer session of today's call. If you'd like to ask a question at that time, please press "Star" followed by 1 on your touchtone phone. I'd like to inform all participants that today's call is being recorded. If you have any objections, you may disconnect at this time. I would now like to turn the call over to Ms. Joyce Rose. Thank you, and you may begin.

Joyce Rose: Thank you and welcome to the Child Welfare Information Technology Systems Managers and Staff Webinar series, brought to you on behalf of the Health and Human Services Administration for Children and Families, Children's Bureau. I'm Joyce Rose, your host and facilitator for today's discussion. Today's webinar features a diverse panel discussing lessons learned while implementing mobile solutions for Child Welfare. Next slide, please.

So, let's meet our panelists. And we are very pleased to have both state and county participants offering differing perspectives. From the state of Washington, Division of Children, Youth and Family, we have Anne Hunt, the Compliance Manager; Kevin Kukas, Products Manager; Neil Edgin, Child Welfare Application Director; Christian Doran, Mobile Application Project Manager and Scrum Manager. And from the state of Minnesota Information Technology Services, we have Tom Kine, who is Director of the Microsoft Application

Development Division. And from Carver County in Minnesota, we have Michelle Selinger, Child and Family Manager. And from Winona County in Minnesota, we have Mark Anderson, their IT Director. Next slide, please.

Attendees are encouraged to participate in the roundtable with questions and comments. All of the participant lines are muted now, but we will open them for the Q & A session at the end of the discussion. Please be aware that you can submit questions at any time using the GoToWebinar chat feature and those will be queued up and addressed during the Q & A session. As an FYI to comply with 508 standards, please note that addresses will be read aloud. Once today's roundtable has ended, you may submit questions to ccwis.questions@acf.hhs.gov, or to your federal analyst. Previous webinars are posted and can be accessed at www.acf.hhs.gov/cb/resource/state-panel-cloud-computing. Next slide, please.

Our roundtable participants will provide a short refresher of their respective Mobile Implementations, followed by an in-depth discussion of related topics. We're going to talk about, again, the designs and caseworker mobility from both Washington and Minnesota. We are going to do a "lessons learned" panel discussion with lots of interesting questions, followed by an attending Q & A, and then we'll do a short wrap up. Next slide, please.

Let's start with the Washington State Child Welfare Mobile Network. I will turn it over to Neil Edgin to explain. Neil?

Neil Edgin:

Thank you. This is Neil, and I'll start by giving a high-level explanation. There may be some technical information in this, but I assume that much of our audience is technical. Washington started in 2016 to build a native mobile application. One of our goals going into it was that we wanted offline capability, and that's why we chose the native mobile app. After some research, we decided to go with the Apple, or the IOS platform, and use Xamarin as our building tool because the expertise that we had in-house was in writing .Net. Xamarin is a tool that you can use to build a mobile application using .Net, and it rendered to either Apple or Android or Windows, if anyone is even using that anymore.

So early on, we decided that we wanted to have a contractor that would come onsite with us and be able to provide some agile training because we were essentially a "waterfall shop." We wanted to sit side-by-side with them and write the application together and own the code at the end. So that was, that was really important to us. We wanted to make sure that we were able to support the application going forward.

So, the security that we considered with this, because of the nature of the data, we had to make sure that it was ultimately secure. So, on the diagram on the lower left, you'll see the MDM wrapper, that's the mobile device management. The mobile device management tool has essentially three components. The

wrapper, which is actually the proprietary code that you write into the application, the cloud-based relay, and then the enterprise gateway. Basically, the application is registered with the Cloud Relay, meaning that the Cloud Relay, the service, is aware of the ID of the phone. It's an IMEI number, and also the IP address of the phone. Once the relay knows the identification of the phone, it can validate that through the relay into the enterprise gateway. And, the user is then authenticated into the network through Active Directory – through that enterprise gateway. Coming in through the gateway allows access to the API, which is connected to our – I have on here SACWIS – we've actually declared CCWIS. So, that is our legacy system. So, the API is a RESTful API. In other words, it communicates using the HTTP protocol, and using JSON as the protocol, or the type of data.

Going the other way in the diagram, it actually goes through a load balancer. And this is, once you're authenticated, the user is..., say they are, a user is getting a list of cases. That will go through the load balancer because early on, we discovered that performance was potentially an issue. There are several methods that call and get data from the AP, from the database. So that is. Oh okay. Sorry, I'm going to back up a little bit here.

In the application, there is a SQL database - it's a SQLite database - you'll see it in the lower left inside the MD wrapper. When the user first logs on, that data is loaded from the SACWIS system into the phone so that they have offline capability. So, say a social worker has a caseload, once they log into the application, it gets all of that data and stores it locally. If they go throughout the day and they're offline, they'll be able to access that information and add information to that case, and then it will synchronize once they're back in touch with the network.

So, we did some load balancing during the development and discovered that we needed multiple nodes on our API. And, when we talking about the API, we've developed separate modules and controllers for business and core programming to meet the CCWIS need/requirements. So, those APIs were built with that in mind. There's also connectivities to some responsive web applications that are both accessible from the SACWIS system and from the mobile device. And we have...

The last thing is the content management system. The application has the ability to do file-up loads and view those files through the content management system. So, that's Washington's network.

Joyce Rose:

I apologize, I had my phone on mute. So, thank you, Neil. I see on your diagram that your end-user devices are either a phone, which I assume is an iPhone, and also a Tablet. Is that correct?

Neil Edgin: Yes, that's right. We target the IOS platform, but the native application is responsively designed, so it works well on either a phone or a tablet. Both of them have the same coding system.

Joyce Rose: Thank you. Okay, so let's go to the next slide, and given the state-managed, county-administered governance structure of Minnesota, I would ask Tom Kine to explain the state role - how each county hosts their own solution. Then Mark Anderson to describe the Winona County configuration, which may be typical of other Minnesota counties. Tom?

Tom Kine: So, for those of you who don't understand state-supervised, county-administered, if I explain this right, you should be horrified or at least sympathetic to me. The counties in Minnesota are independent political entities. And in a state-supervised, county-administered model for social services, the state interfaces with our federal partners at ACF and sets policy for the system of child welfare and for the system. But the county actually administers the various social service programs. So, social workers are employed by the counties, not by the state. The state has an oversight role on this. It made it challenging, initially, to have a SACWIS system even established within the state of Minnesota because the counties are independent, so we had to garner an agreement from all the counties that we would have a uniform system statewide, and the counties participated financially in funding the initial development of that system. So, there was a lot of complexity involved in both politics and the financing of the system. That is still the case in Minnesota.

The counties are generally – I would consider them first-class stakeholders in the system. There is a county-state steering team that sets direction for SACWIS overall, but there's a wide degree of latitude in how counties use the system. So, the Minnesota SACWIS system is built similar to a COTS product, such as an SAP, and is independently installed in each of the counties and county infrastructure. But communicates back to central servers for a variety of functionality, such as unduplicated clients, viewing cases across county lines, and so on and so forth. So, there is a system footprint in the counties, and historically counties have had ODBC read-only access to those local data storage in the counties. We are in the process of centralizing our infrastructure. We are also have declared for CCWIS, so we will be making modifications in accordance with CCWIS. I would say though, in general, from a technology perspective, the Minnesota SACWIS anticipated, in spirit at least, the CCWIS requirements, and it is possible to access the data and so forth, via SOAP and we will be migrating that towards RESTful services.

When it comes to implementations of mobile caseworker solution, the counties have had the ability because they've had access to the data in their counties to implement solutions independent of the state. And early in, when some solutions started being proposed from Minnesota, a joint decision between the county and state was made to not pursue a uniform system statewide at that

point. That may change in the future, but that was the decision. So, with that being said, various counties, including Winona, have implemented several different solutions across the state. And I think I'd wrap it up there, Joyce.

Joyce Rose:

Okay, Mark, do you want to walk us through your schematics please?

Mark Anderson:

Sure. I appreciate Tom saying that it could be horrifying to look at the way the state of Minnesota is set up. Let me go back just before I talk about the diagram. A number of years ago, 2009, we were about ready to implement a new content management, document management system. And, at that time, walking around with the content management system, everything looked like it could be solved with it. So, we started scanning and developing workflows and really moving forward pretty quickly across our organization to try to get a handle on all the documents we've created over the past 170 years. And, when we started looking in human services, there was what we considered a really big opportunity to make the life of the people working in human services and community health better by automating some of the work that they do and auto-filling and working with their documents in digital format. And it naturally, led us towards looking at mobile devices; get the information and the work as close as we could to the people that were going to be served.

We're not a large county. We're the warmest county in Minnesota, so if you guys are ever in Minnesota, Winona County is the place to go. So, we partnered with five other counties and formed a small collaborative to do this type of work. We used our content management, document management system as the basis of providing – well, in the upper right corner we've got the content management system as OnBase. We're not large enough to have programmers on staff, and not really large enough to buy a lot of programming time. So, we looked at what was available, and OnBase, or Highland, who has the OnBase product, had a spin-off called Northwoods, and they were a bunch of human service-oriented document management, content management and workflow management-oriented specialists. So, we partnered with them, and we also chose the IOS platform. There were a lot of reasons but when you look back, what it was like in 2009-2010, there wasn't a lot of mobile devices that were capable of doing what an Apple iPad or an IOS-driven device could do.

So, we started development that way, working in concert with our vendor to develop a solution. And part of what we were looking at when we did it was providing the tools that the worker needed in the field. We needed a camera, video recorder, signature capability, all the files that were necessary for the workers to do their job out in the field. And we also needed it to be safe, so mobile device management being able to brick a device or find a device and recover from a loss, so we wouldn't lose any data. We built that all in. But simplified, everything is in the same either pilot or co-pilot. Co-pilot is our mobile version of this application. Pilot is our desktop application, and everything flows back into the same content management group. We used

encrypted government Amazon storage so that we cannot directly hit back across our firewalls. Since we have a number of different counties that we're serving. We have a check-in and check-out at the Amazon point. But we kept it pretty simple, and it works pretty well. We had... When we developed these applications in concert with our employees, often employees are not thrilled about being able to do their job in a different way. I don't think we could take this particular solution away from them. It really works well for them.

Joyce Rose: That's great. That's, that's, that's really good to hear. Okay, so there you have a couple of... a county configuration and then the state of Washington mobile configuration. So, let's move on to the next slide.

And we're going to start our roundtable session and we're going to talk about these particular topics: design and development methods and contracts, change management, configuration management, connectivity challenges, security – both physical and data, some training and then what not to do and definite should dos. So, let's get started. Next slide please.

And I'm going to prompt the Washington team, supported by Tom Kine from his perspective. So, from an agile perspective, what lessons have you learned regarding development contracts and change management, specific to supporting and maintaining your mobile application?

Tom Kine: Joyce, are you talking Tom Kine in Minnesota?

Joyce Rose: Yes, but I'm going to start with the Washington team. Anne?

Tom Kine: Oh, okay.

Anne Hunt: Yes, this is Anne Hunt with Washington. I was the lead in the team effort to develop an RFP, conduct a procurement effort, and do the contract management. I'm speaking to this question. Our contract was specifically built for flexibility. So, what that did was allow us to identify requirements for the RFP at a very high level. And then, after we had the contractor's, the designated contractor's response, it then allowed us to work with them to define the requirements with much more detail, as well as trade or modify ones that we had in the original RFP and contract.

The paid deliverables for this contract were functional and technical architecture documents. The functional basically detailed the user stories that were developed at a detailed level. It had API technical doc requirements, source codes, UAT results. We had a great component in our contract for agile coaching, which was all along the lines... which occurred all during the development of our app. And then we had specific off-site training with the vendors, agile and mobile training area. They also were required to develop training materials. Additional deliverables were requirement status and incidence reports and just a regular status report that you'd normally see for health of the project. Then the contract was for minimal, viable products for

both a caseworker and foster parent app. And, both of them were designed with the expectation that the vendor would come in, sit with them side-by-side, develop the MVP, and then we knew we would add future releases incrementally to add new features. Once the vendor was on board, we developed an agile team that was both the vendor and state staff. This team developed the backlog - the detailed user stories that we'd be working with. And then our product owner prioritized those user stories. Key requirements were audio and photo uploads, case notes, maps, and phone functionality. We did a little bit of trading, such as trading out a finger swipe function to build in a Washington audio recorder. Tim will speak more to why we did that. Again, we had the agile coaching and training component in the contract. And then, at the end of the contract, we used a sole source extension to keep the expertise that was needed for the tool, and so the state was fully able to take that over.

Joyce Rose: Anne, I have a question. This was a new type of contract approved by your state procurement, is that correct?

Anne Hunt: It was similar. We haven't really probably built out the ideal agile contract process that we want to utilize. So, this one looked a little bit like a time and materials. Yes, it was approved by our contract staff, actually, you know wrote it and executed the final document.

Joyce Rose: Great. Anything else regarding change management, specific to supporting and maintaining your mobile app?

Neil Edgin: Well this is Neil. We did go into this knowing that we were going to be building using the Xamarin tool that I mentioned previously, targeting the IOS platform. And, in that, we trained up. Basically, we signed up with the Xamarin University and had staff go through the training, and then throughout the contract period, as Anne mentioned, we worked side-by-side in the same agile team. So, rather then, in some cases in the past we've kind of waited until the end and then said, "Okay, tell us everything you know so that we can take over the application ourselves." We have been bit by that. So, throughout the entire development period, we sat side-by-side with these developers and we knew what that application content was and how to make changes to it. And, when we separated from the vendor, we owned that application and knew how to manage it. And we also staffed up a specific mobile development team to manage that change. And, not too long after the vendor left, we made some significant enhancements to the application. We're very proud of that. So, I think that was something we knew going into it that we had to know how to manage this thing.

Joyce Rose: Right, so, I think what I hear you saying is that it's extremely important and the lesson that you learned was to sit side-by-side with whomever your vendor is that was doing the development to pass on all information and expertise, is that correct?

Neil Edgin: That's right. If you're developing a custom solution like this, that would be our advice.

Joyce Rose: Great. Alright, Tom Kine from Minnesota, what can you add?

Tom Kine: I work across various divisions within DHS, but I'm actually with an IT organization that services all executive branch agencies, Joyce, and so altogether I'm supporting or have been involved with about six mobile apps. What I would like to do is talk about development methodology change management and the context of the different apps, since what we're looking at here is a contracted created solution.

I do have an application that was in-house developed, custom, HTML 5 – it's used for child care center compliance monitoring. What I would say in regards to mobile app development is that the user experience is just absolutely critical to this kind of an application for it to be successful. So, we used an agile methodology on that project, and early in we focused simply on wire frames as opposed to zeroing in on the user interface/user experience. And as we got deeper into the functionality of the wire... with the wire framing and were getting closer to having a releasable product, we engaged UIUX expertise on a contracted basis to come in and do formal usability studies, and that was just immensely valuable to us. We had a far better solution at the end then we... then I think we could have otherwise. So, that expertise and the user interface/user experience is critical.

The other thing that I would emphasize on custom development of any sort, or I suppose any implementation of a mobile platform, is that the extent of change management needed with this. It's very difficult, in my experience, to be as efficient with a technology solution, as pen and paper is in the field. There's nothing simpler then pen and paper and crossing something out. So, it's difficult to sell, or a mistake to sell these applications as necessarily being more efficient. We really sold the application I'm talking about based on the increased capability, the accuracy, the consistency, and the fact that we have data instead of marks on paper.

And on the change management side, even extended beyond the user community to other stakeholders, which in this case were child care center owners, so they understood what the application was going to do in regards to child care compliance monitoring and into the legislature so that we had legislative backing as well because there certainly can be political ramifications with some of these kinds of systems. So, I would think those are general sorts of comments that are true across many mobile apps. I'll let Mark go on to talk about the contracting process in Winona County.

Mark Anderson: Alright. Couple things. We had already had a relationship with the vendors that we wanted to work with. So, contracting when we did this really came about like what we were used to. Somebody is back there...

Anyways, we identified the project need. So, the project need was having a mobile device handling social services out in the field. We conducted a discovery process with vendors and all stakeholders to identify what the needs were on all sides. And, I hate to even bring Lean into it, but almost conduct a current state/future state with some Lean-ish project tenets, so that we could not just take a paper process and change it into a digital process, but actually clean it up and provide a better solution for the workers and our clients.

After we had all that put together, we did a statement of work and statement of work would be adjusted by speaking to the stakeholders again and making sure that it covered all the aspects that were brought out during discovery. Project implementation would begin. We would make adjustments as we moved, when something would come up that no one had thought about. And then, bring the project to fruition and be careful that we don't get into a project creep that causes an infinite project that never, ever ends because somebody wants a little change and a little change. The project has to end. Once we get to that point, we would have an after action review, we'd take a look at all aspects and make sure it met the needs.

Pretty much, after we were finished with that, we would start the project up again because it would either be improvements or changes and continued to improve our work so that everybody is able to do the work that they need to do, where they need to do it, and how they want to do it.

Joyce Rose: Okay, so I what think I heard, both Tom and Mark stressed is the importance of the end-user involvement. Whether getting them involved during the UI – user interface portion, or as Mark said, get them involved initially in the requirements and development effort. So, that is pretty typical, I think. Let's move along, and we're going to move to the state of Washington – your team. The question is configurations change because software is added, updated, or removed. Configuration management tools make implementing and enforcing these changes possible. Do you have any lessons learned regarding configuration management and the associated tools you may use, may have used?

Joyce Rose: Anne?

Neil Edgin: Yeah this is...

Joyce Rose: Go ahead

Anne Hunt: Neil is going to speak to that.

Neil Edgin: Yeah, as I mentioned before, this is Neil, the configuration management tools, basically we staffed up a specific team and trained them on the software and tools that were necessary, not just with the development, but also the deployment. With the IOS, we established a Jenkins continuous integration/continuous deployment process. And the necessary training that

went along with that was part of the project scope that we learned from the vendor. The provisioning and the account that we had to get with Apple to make that all happen, that was all part of the deliverable. So, that was how we finished that.

Joyce Rose: Okay. Tom Kine, do you have words of wisdom regarding lessons learned of configuration management and any associated tools?

Tom Kine: Well, yeah, there's two fundamental approaches, well there's probably more, but there's two commonly used approaches to a mobile app. One via a native application such as what Washington was discussing. The other would be a browser-based application, such as HTML5. What I would add or offer is that the responsive browser-based application is far easier from the change management perspective because it's certainly more in line with conventional development, and we're not worried about distributing an update to any devices on the endpoints. Again, I think from the perspective of a native app, we did have one early on that we used on a prototype basis here in Minnesota. It was a number of years ago and we would distribute the application in the Apple store where users could get the current version. But, I'll let Mark talk to how this solution handles configuration and change management.

Mark Anderson: Sure, yeah this is Mark Anderson again. One of the things that we determined since there's not just the mobile device and the mobile application, or even html application running in a browser, we ended up with this integrated so tightly with the rest of our system that making a change to our content management system could change... ripple across the board. So we, at the beginning of this process, a number of years ago, we created a development, a test, and a production environment. Nothing...we... changes are all the time. This system is constantly organically changing, and to do that, we develop and develop and test it before it goes out. We can back up at any time. "Knock on wood," we haven't had any major issues with our developments and with having to upgrade. If you upgrade the operating system on the server, you upgrade SQL, you upgrade Northwood's application, you upgrade the Highland application, you upgrade the service packs, for security sake you upgrade the mobile application. We have taken that twice divorced from the production group so we can make sure that what we develop and deploy ends up not breaking anything else.

Joyce Rose: Great, okay, let's move along. And remote connectivity challenges can affect use of mobile devices in the field, and thus caseworker productivity and time limits. What lessons or processes can you share regarding working offline, such as data timeliness, reconciliation of data, or the synchronization of data from mobile to the main system? Mark, do you want to start us off on that?

Mark Anderson: Sure, single database. Can't have multiple databases out there and expect that they're going to be compliant. We do some offline work and we lock the database file that's being utilized - download it, upload it. We have paid special

attention to this. You don't want to have multiple copies of the same data. And, well, it has been working pretty well so far. We are pretty pleased with the way this "check-in/check-out" of the files is going.

Joyce Rose: Great. So, let's ask the Washington team about any remote connectivity challenges that they may have had.

Neil Edgin: Yeah, this is Neil. So, we actually thought about this and designed it into the application for the social workers. And when they start up their phone, or actually it happens when you open the app, then it calls up the APIs and loads up the data for all of their casework that is currently assigned to them. They go out throughout the day, and if they happen to be offline, that information that they're adding, the files that they're uploading, the notes that they're taking, any of the information that they're collecting in the field is stored in the SQLite database. And then when they come back into connectivity, basically there's this whole process that pings the network and once it finds that it's connected, it synchronizes that information back up. As I mentioned early, that was something that we were concerned about with the performance. When you first fire up the app, some of these caseworkers have a large caseload, and they'll get a lot of data to cross the wire. And so, that's when we decided to load balance and use multiple API nodes.

I might mention here that part of the contract was a public-facing foster parent application. And we have some lessons learned regarding the offline capability of that application that I want to share. Essentially, the idea was that the foster parents were contractor providers; and therefore, we would give them Active Directory accounts, which is the only way to go through the mobile device management tool. We worked with them to ensure that they understood the onboarding process. In the end, it was... it was somewhat unsuccessful because I think there was 26 or 27 steps in order to register your phone with the mobile device management tool to get the app. A couple of the prompts say, "we're going to take control of your phone and if you lose it, we're going to wipe it out." Some of the language was a bit strong. So, the buy-in for that was very low. So, I think the lesson learned there was analyze your requirements carefully, early on, and make sure that the trade-off – if you're making the trade-off for offline capability – that the implications are well understood. We're since building a replacement for that application as a web-enabled or a mobile-enabled web application, which we think will be much more successful. But if you've got a lot of offline areas, it's something that you really have to think about.

Joyce Rose: So, obviously, the state of Washington is geographically diverse in terms of the different counties, wherever they're located. Did you experience any remote connectivity challenges?

Kevin Kukas: This is Kevin from Washington. So, effectively, I'd be remiss to say no. We definitely have some remote areas that we have to address or what have you.

Which is why we started our primary solution as a native application. But, due to the connectivity challenges with that, we had to obviously look as a statewide implementation, what was really a value added to having those instances where you might be remote, to what information you can have versus creating, balancing the heaviness of the application native versus web applications and access through connectivity. So, we had to balance that to make sure, as Neil pointed out earlier, there are some caseloads that are extremely large and to get all that information downloaded timely while they have connectivity, then to be able to use offline. It's a balancing act. Do you set parameters as in, you've got to log in and let your phone sit for 30 minutes inside the network to make sure that it downloads everything to even work with your application and have your information – balancing that. We're taking a thoughtful approach as we go forward and as we add anything to address that connectivity challenge, looking at something native versus a web application. And just making the business decisions that say, "Because of the nature of this work, we are going to require connectivity to submit that information or to use that application." Conversely though, some of those areas that are critical, such as case notes, some of the safety documentation. As we look at that, as Neil's already talked about, we actually have the capability, a queuing system that the worker can complete that work offline, and then as soon as they get inside the network, it'll ping it and it will upload that. So, it's a balancing act for us.

Joyce Rose: Right, thank you very much. Let's move along and let's talk about the lessons that you've learned to protect the physical security of your mobile devices. So, what is your protocol if a device breaks, is stolen or is lost? Mark, let's start with you.

Mark Anderson: There are two physical securities portions to it. We provide an armored case for those devices. I've been working in the field for a while. People drop a lot of stuff. So, we try to protect the stuff from drops. In the case, where the device be lost, left or stolen, it's secured and we will auto-wipe if it's attempted to enter your password more than – I think we have it set at three times. We also have MDM, so we can rip the device remotely, at any time, if it's reported missing.

Joyce Rose: And MDM stands for?

Mark Anderson: Mobile Device Management.

Joyce Rose: Great, thank you. Washington, what is your protocol for the physical security for your devices?

Kevin Kukas: This is Kevin from Washington. And I'll start with what we've already heard. We have that same concept with regard to the MDM for the device management, where a container on the device – if the device is lost, stolen, etc. – we have the capability from remotely to wipe that container, which would contain any of that native application, any of that data. We are able to do that remotely as well. With regard to lost or stolen of the actual physical device, we have our

protocols with regard to reporting that in a timely fashion, and then going through the process. One of the caveats that we have that I'd like to touch on. This was important to us. When we set up our mobile application, anybody who has used a mobile phone knows that the user gets some parameters to what the app says you can and can't do, and what's enabled and what's disabled. One of the things we did, we made it required for them to go ahead and give location access always, as a capability to actually log in and use this application. So, we didn't give them the ability to turn off location and still use the app because, obviously, that would create some vulnerabilities for us with regard to be able to find that device and be able to wipe that information.

Joyce Rose: So, Washington, does the state supply all the devices to the end-users in the counties?

Kevin Kukas: Yeah, this is Kevin from Washington. Yeah that was actually something that we engaged in prior to actually procuring and developing and implementing mobile applications. We had decided to move forward for lots of reasons. One, it made sense. And two, we have governor directive to become a mobile workforce. So, we had actually already begun the implementation of iPhones and tablets to our users, social workers, so on and so forth. And the iPhone was the decided device, from at that time our leadership that made the determination that we would have one platform that we would develop to internally.

Joyce Rose: Another question is, with your iPhone implementation, is the end-user, can they run their own unique apps on their iPhones?

Kevin Kukas: So, this is Kevin from Washington again. No, the MaaS 360 actually gives us the capability, because they're corporate devices, to manage that entire device, which includes creating an application store effectively – I apologize for not knowing the exact term. But the only apps that they're allow to deploy or download on their device come from the MaaS 360 Management device. And so, with that, we control which applications they have, whether we enable and disable, so on and so forth. iPhones, yes, does have some proprietary pieces that we cannot control as far as their apps, but we have some control over it. This might be a good example I can use to just demonstrate what we're talking about here. The audio recorder – we've actually disabled the audio recorder – the iPhone native audio recorder that comes with the device because that created some inherent challenges of us doing our investigatory interviews, creating audio recordings of these because the iPhone requires us to go through iTunes. And that was something that was not going to happen with our investigatory interviews. So, we actually had to build an audio recorder, native, inside of our application to do the audio recordings and be able to upload into our system.

Joyce Rose: So, that is a very interesting lesson learned there.

Kevin Kukas: This was on our list for a little bit later, so I apologize for jumping the gun on that.

Joyce Rose: That's fine. So, Mark, my assumption is that the county purchases your devices?

Mark Anderson: It's identical. We took all those same steps – we own all the devices. We don't allow additional software deployment on the devices that we own. We control it through our mobile device manager to publish apps that we do allow, and we don't use any of the Apple built-in applications for recording or iTunes or any of that stuff. We keep it all in-house in the app that has been deployed on the phones or on the devices.

Joyce Rose: Great. Thank you. So, let's move on and let's talk about the end-users and field staff and caseworkers. So, we're going to start with Michelle from Carver County, I believe. What key lessons did you learn when rolling out the mobile app to your field staff and caseworkers?

Michelle Selinger: Sure, so...

Joyce Rose: Did you encounter... Go ahead.

Michelle Selinger: Yes, so thank you. We are using the same system as Mark was talking about with Winona County. Some of our key learnings were to spend time on the set-up; test it for at least two months before you implement it across the department; spend time teaching new habits; and remember it takes time to learn. Remember that learning is only 10% of doing the actual training, 20% reflection and 70% of doing. So, plan for the ongoing support long-term. It's not that you implement and you're done. Also, identify early on who will be your detractors. So, those least willing to do this, and involve them early on in the process of implementation. Also think big picture. So, not just about implementation, but long-term. So, how will this work with when you bring in new people? How will you add new forms as the laws change? That kind of thing. And also involve workers early on so they're part of the implementation, and it isn't just being done to them. And this will help get them invested.

Joyce Rose: Okay. Did you encounter any major surprises when you were training staff to use the mobile app?

Michelle Selinger: Absolutely. Probably the biggest one was don't assume that workers will do it, even if you set up deadlines because doing child welfare work – there's a lot of unexpected things that happen. So, just because you say do it, doesn't mean they're going to necessarily do it. So, you want to find a way to monitor the use and provide the support when they need it. Also, don't assume that everyone will know how to use the technology. We were quite surprised that we had to spend some time just teaching basic instruction around how to use the iPad.

Joyce Rose: So, I am sure that your workforce is very diverse in terms of maturity. So, I would assume that your younger end-users, your younger caseworkers, were

excited for the technology to be rolled out and have had significant experience using either an iPhone or a Tablet.

Michelle Selinger: Absolutely.

Joyce Rose: The other portion of your workforce – how did you... what did you run into in terms of them being hesitant to use the technology?

Michelle Selinger: Well, it was important to balance the workload. That was part of it. So, like you said, our younger social workers really caught on and they were teaching some of us who have been around a few decades. We really brought those social workers on as testers, and they're now our trainers. But we really, what we failed to do though for them was to take away some of the work as they were helping us with this other implementation. We also learned that we needed to plan for other processes, like court discovery. How are we going to use this process to help us get our court discovery, quicker, more efficiently, paperless? It was also important that we looked at the timing of our implementation. We didn't think about that and we planned some of our go dates around big court deadlines or time deadlines, and that really got in the way for workers. And then, the other thing we noticed is whatever you do to help prepare them, it won't work for everyone. So, we had a lot of scanning parties and countdowns, but that just really stressed some workers out, where it supported other people's change.

Joyce Rose: Excellent, thank you so very much. And I'm going to ask the Washington team, what was the most frequent challenge or obstacle you got push-back from your end-users?

Christian Doran: Thank you, this is Christian from the state of Washington. Really, I wanted to echo almost everything Michelle said. We experienced the same. From... we learned a lot as we went through the process. Our original plan was we were going to build such an intuitive app on an easy-to-use iPhone that we wouldn't have a plan for any of this. We would simply hand it over. We... as we met with our users, we quickly woke up and realized that wasn't really a plan. So, I don't know... we hit those issues early on, and then we created a full-fledged IT training team located within our IT shop. And we made a plan for them to roll out to our 45 offices, and be on the ground, in the offices, training on the app, and more importantly, training on the actual phone itself. And so, one of our...

Joyce Rose: Did you bring any of that field staff in to join your in-house training team?

Christian Doran: Yes, we did, and that was instrumental in having those early wins and preventing further issues. And luckily, with the... again we adapted early on preventing later crises and we stationed them out in those offices for the rollout. And then, again Michelle said this earlier, we had them available after rollout to answer those questions, to hear how it was being used, to adjust what we thought was our plan for the use. I think one of the keys for us also, in that

usage as we had mentioned, we had that plan of “if you build it, they will come.” And we said, and we gave them the app and kind of stood back and patted ourselves on the chest and said, “Great, incorporate this into your daily work. Make this, you know, make this part of your case management.” And that’s where we kind of hit some lessons where, luckily, we had some early adopters. Not maybe who we thought they were. It wasn’t necessarily just the younger groups. We had a good collection of people who were early adopters, and we used them to see how they used it, how they took this extra piece and rolled it into their more traditional case management work. And then we kind of used them to champion this throughout the other offices and used that as our lessons learned on – this is what it looks like in your daily work.

Joyce Rose: Great. So, I’m curious now as you make changes to the app or any type of change, what is your training resource? Do you use web-based training? Or do you still do onsite training? Or do you do both?

Christian Doran: We do all that and anything users request that’s reasonable. And again, we find that we love the idea of web-based trainings or having materials that people can view offline. But, again, we identified that there’s not a “one fit all...” “one size fits all solution,” so we continue to offer that onsite available approach for users and constantly checking in and updating the material as it goes, knowing that it’s, again, going to our agile processes that we constantly revisit and refocus them.

Kevin Kukas: And this is Kevin. I’d just like to add to that. With regard to our training process, we’ve actually taken a multi-tiered approach, meaning, identifying multiple ways users learn, and then being having that available. I mean, everything from your immersive learning to your classroom trainings, depending on what’s being pushed out, how it impacts their work. And then, as Christian spoke to earlier, not really having a vision of how it might fit into their work flow or how it might modify their existing workflow. That’s now part of our training. “Hey, you know, this is technology and here’s how you might use it.” And trying to plant seeds to those workers through either micro-learning or sources of videos or whatever mechanism we need to do. And, the piece that’s really critical for us is we want to own the technology but getting our business partners to embrace it and own the technology to find a way to incorporate it into their practice is beyond critical. Anything we’ve been successful with from a technology standpoint of implementing has had business buy-in from the get-go. Even if technology seems to make sense, if our business partners do not buy in to it, our users really struggle to incorporate it and implement it.

Joyce Rose: Thank you so very much. Let’s move on, and this is directed to the Washington team and to Tom Kine and to Mark. When developing your mobile solutions, how accurate were your cost estimates? And then, what were the unexpected costs?

Anne Hunt: This is Anne with Washington. Our contractors, again, much like a time and material. So, we had to specify timeframe and specify amounts for the first original contract. Of course, when we got to the end of that, we wanted more. So, we were allowed within our contract limits to extend it for dollars and for time for a few more months. After that, we were not able to extend it any longer and we would have had to re-procure. So, my best advice is whatever your funding allows, so ours was funding limited, but get the most that you can from your vendor before you let them go. And then again, as I mentioned earlier, we weren't quite ready to take over the Xamarin on our own, so we did do a sole-source contract to extend that expertise, that vendor expertise to that.

Joyce Rose: Great, thank you. Tom Kine, what words do you have?

Tom Kine: Joyce, I can't think of any specific to mobile solution, it's different than a conventional solution regards to cost estimates. I think it just all boils down to having good requirements and understanding what you're trying to do and estimating accordingly. So, nothing has come to mind that is different with mobile that I can think of.

Joyce Rose: Great, thank you. Mark, do you have...?

Mark Anderson: I agree with Tom. The main thing that we've seen – you know, we do a pretty tight estimate of time. And it does kind of go like Washington said - time and materials - If you're doing something new that you haven't broken that type of ground before. But what we've seen, and we always guard against is a scope creep. As soon as the battle is joined, it seems to fall apart a little bit unless you keep a tight hand on it and keep it moving towards the goals that you had set. That'd be about it; it's really no different than any other new-style project.

Joyce Rose: Great, thank you very much. So, let's move on and let's talk for your mobile implementations. What are some of the things that you should not do?

Tom Kine: Joyce, this is...

Joyce Rose: Go ahead, Tom.

Tom Kine: Go ahead.

Joyce Rose: Go.

Tom Kine: I was going to say that, and this may seem obvious once I say it, but the limitation of this system in Minnesota is that it has read-only access to the SACWIS data. And that definitely is a limitation. We're going to fix that with CCWIS, and I'm excited to do that. So, it does limit the utility of the solution quite a bit. They're able to pull data out of the SACWIS system in order to pre-fill their forms, but there's no provision to push data back into the SACWIS. So, I was pretty eager to jump out there and say it's definitely not something to do. And it may be obvious to everyone else.

Joyce Rose: And then a “definitely should do,” right?

Tom Kine: Yes.

Joyce Rose: Okay, Washington team. What are some of the things that you definitely are not to do that you want to share with your colleagues across the country?

Kevin Kukas: So, this is Kevin in Washington. I don't think we have enough time left on this to go over everything. This was an amazing opportunity for us to learn a lot of do's and don'ts. I'll highlight a couple of key what not to do's. One of the key things not to do is to enter it as a technology project, and really make sure that your business has an investment from the get-go. Washington began this as “we want to advance in new technology to support our workers.” That's a heart of gold, and it's a vision and a belief and we want to embrace that. The difference is, it was IT lead, and we didn't have the opportunity or afforded our business the opportunity to embrace and engage up front. So, it was a scramble once we were into the process of really identifying and defining, what the... doing the careful analysis of our refinement and getting critical requirements and getting those critical elements. Now, with that said, we hit home runs on many of them. But there were areas we could have done better or repurposed the time that we built certain requirements in that weren't necessarily as much value added to our business partners. So, that's what not to do. And it's easy for technology shops to say, “This is amazing technology. You know... they use it in their everyday life, let's jump on to it.” But don't get ahead of your overall agency and your organization on the business side. And like most states I'm sure, child welfare moves very purposefully, that's translation for it moves a little bit slower. And you want to make sure that your IT doesn't jump out in front of it. That's probably our biggest don't. Neil, did you have any don'ts from the technical side of things?

Neil Edgin: Well, as I mentioned earlier, we sat with the vendor. We understood the code. The knowledge transfer was clear. From an application management standpoint, that was one of my big priorities. Make sure we don't end up with something that we're tied to the vendor in order to support. That's about all I have.

Joyce Rose: Okay. From the end-user perspective and the case worker perspective, Michelle, what is it that you should not do?

Michelle Selinger: So, a couple different things. Definitely don't assume this is going to be easy because, as I heard Tom say earlier, change management takes a lot of time and it's an ongoing process. So, don't assume you train everyone so therefore your implementation is done. Just remember that this will be an ongoing process that you need to plan for.

Joyce Rose: Okay, Mark?

Mark Anderson: Mine is more philosophy-oriented. Don't be frozen by the difficulty of it. It's worth it to go through this type of a process, develop this type of business tool for the folks. It's... just don't be frozen by the difficulties and the challenges – keep moving forward.

Joyce Rose: Great. So now, we talked a little bit, well we kind of mixed in some of the things that you definitely should do, along with those that you definitely should not do. Does anyone have any additional, very important things that you should do when you're trying to implement a mobile solution for your caseworkers?

Michelle Selinger: This is Michelle from Carver.

Joyce Rose: Thank you.

Michelle Selinger: I can certainly speak to that. I think it's really important that you look at past implementations and take into account what worked and didn't work and do more of what worked. So, I think it's important that you look at the culture of change within the organization when you plan this. Also, I think it's important to look at the diffusion of innovation theory, and I've heard some reference of this on the call today. Include your early adopters, as well as your laggards or those detractors – those that will take more time in your implementation early on. That really helped us. We also had to plan for regular meetings way after the implementation to talk about the ongoing struggles or the needs, and really involve our IT folks. We realized that we implemented, and we thought it was done, but it clearly wasn't – it's an ongoing process. The other thing I didn't do that you should do is planning your budget for iPads that get broken; for stylist costs; for a backup replacement every three years. So, there's the ongoing costs that I didn't necessarily think about up front. And then make it fun. For me, with a bunch of a social workers, we did all kinds of things. We counted down. We celebrated our successes with slide shows. We had huddles. We even did a song based on our implementation called, "Chucking a Mountain of Paperwork," and on the... based on the song, "Can't Stop This Feeling." So, we found all kinds of ways to have fun during the implementation process as well.

Joyce Rose: Great, I like the take an inventory of necessary things like power cords, etc., and also to create an age-out plan so you can continue to bring in new hardware.

Michelle Selinger: Yes, definitely.

Joyce Rose: Cool. So, before we go to our attendee Q&A session, does anyone on our panel have any additional "should do's"?

Kevin Kukas: This is Kevin from Washington. I do. So, we've been talking a lot about the implementation and the engagement. One of the things that is a "should do," and this was talked about and brought from our development side of things, I think, is the ability to be able to track usage at all different variables. Business won't necessarily know what they want to be able to report and what have you. But from an implementation standpoint, and an onboarding standpoint and the

engagement, in validating the value of it. It was critical for us to be able to parse out and be able to identify what features are being used; how many people are using it; how many unique people? And it seems simple, but we had to give it a lot of thought and actually had to go back and add different elements that we had captured behind the scenes and be able to report out from that. And what that then translated to is we were able to give to our training team, and they did things like contests; they had small prizes. And it wasn't financially taxing or burning, but it just gave them the incentive and their names and likes about usage and just little pieces along the way. Whatever works for your area. But, if you don't plan for it up front, it becomes heavy technical debt to try to build that and figure it out after the fact. So, be thoughtful when you're doing it. Plan - have technology built to be able to support that implementation. That would be it.

Joyce Rose: Absolutely and thank you so very much. So, let's move on to the next slide please. That concludes the discussion portion of the roundtable. I certainly hope it was informative and helpful to all of you who are attending. I would now like to invite my colleague, Nick, to run the Q&A session. Nick, please?

Nick Mozer: Hello there everyone. So, for our Q&A session, you can either type in a question into the chat box, or operator, would you please remind our attendees how they can ask a question over the phone?

Operator: Thank you. We will now begin the question/answer session. To ask a question, please press star followed by one. Please make sure your phone is unmuted and record your name clearly when prompted. Again, that is star followed by one to ask a question. To withdraw your request, press "Star-2."

Joyce Rose: Nick, are you there?

Nick Mozer: This is Nick, I'm here. We don't have any questions in the box right now. And we have a great group of panelists here who can answer whatever you might have. So, I encourage folks to please type away or follow the operator's instructions that she just did.

Operator: And we currently have no questions on the audio either.

Joyce Rose: Okay, well, while we wait for any of our attendees to either call in or use the chat box, Tom I think we missed you on some of the should's, or some of the do not's. Can you help us out with some of the should do's?

Tom Kine: I'd go back to what I said earlier, Joyce, which is be conservative and advertising the benefits that this will bring. If they feel like they haven't tried to roll out a mobile solution before. You're far better to under promise and over deliver with this. And productivity gains may come over time, but you're not going to get them at first. So, I would be very cautious about how you present this from a change management perspective. Emphasize the qualitative benefits that are coming in regards to data quality, improve timeliness, and so on and so forth, as

opposed to across the board this is going to be easier and faster. Hopefully it turns out to be the case, but that may come over time. So, I would tread lightly on that.

Joyce Rose: Let me ask if any one of our panelists experienced any pushback from their executive management to develop a mobile application and the pushout iPhones and iPads. How did your executive management view the distribution of that type of technology out in the field?

Mark Anderson: This is Mark Anderson. That's a pretty funny question, actually. Because, when we started this process, executive management and myself really partnered to make this a big organizational change in a new direction. But you know what happens in government? People get elected, and people don't get elected. And things change. And it became less supported as we went on, even though we were right at the end of the project. It was less supported by the executive management of our organization, and it ultimately was supported through the end. But it was pretty touch-and-go for a little bit. It's not inexpensive. It's a large change to the organization at every level, the way they work. And, that was something that I didn't plan when I started working forward. I guess it happens in government, right?

Joyce Rose: Yes, it does. Washington, any comments?

Kevin Kukas: Sure, this is Kevin from Washington. We actually had very good leadership buy-in from the get-go. I mentioned earlier, we actually had a government's executive order with regard to the mobility and getting a mobile workforce. So, we had already had that at the highest level in Washington. And then, from the child welfare side of things, we actually had leadership buy-in. There was a lot of discussion. Even though it may have started out as a technology-driven, there was buy-in from our executive leadership there. The only... the only challenge that I would say there is the executive leadership buy-in doesn't necessarily equate to top-down direction that we're going to embrace and we're going to go this direction. So, we did have challenges at different levels, but not at the executive level.

Joyce Rose: Okay, thank you. Michelle, how about from your agency perspective? Did they support mobility or mobile solution, or not?

Michelle Selinger: Absolutely, because I believe they saw it as a more efficient way. So, it was either bring in more staff, or find a way to become more efficient. And this really helped us become more efficient. Our data is showing that it is working for us. So, we were lucky to have great support behind it.

Joyce Rose: Great, thank you. Nick, I think we have some questions.

Nick Mozer: Hi, Joyce. That we do. Do we have any questions over the phone before I dive into the ones in the chat box?

- Operator: No, there are no questions on the phone.
- Nick Mozer: Thank you, operator. So, the first question is what effect did the new CCWIS rules have on your development approach?
- Neil Edgin: Hi, this is Neil with Washington state. As I mentioned earlier, we are building a modular – you know, we have our SACWIS system, which we've identified our state as a CCWIS.
- Anne Hunt: A transitional CCWIS, so that makes a lot of difference.
- Neil Edgin: Yes, we are a transitional state. But as we added the new pieces of work and the API layer for the mobile network. We built that in a modular way. And so, what we're doing is we're keeping our business logic together, logically, and then the core programming separate from that. So, things like authorization, authentication, logging, approvals, all that functionality that's system wide, we put that in a separate module – separate from business case, or business-specific logic. So, that's some of the stuff that we kept in mind. Also, using a tiered architecture where responsive web applications have a front-end, basically a presentation layer, and then the API layer is separate from that. So, we can utilize the API layer in more than just the web application. We can use it for mobile. We can use it for interfaces and other functionality. So, modularity is really what our focus has been.
- Tom Kine: I would pretty much second that with a slightly different twist, which would be in Minnesota, the CCWIS regulations are going to give us the opportunity to correct that one-way interface; make it a two-way interface. I expect that we will be not using over the long term an ODBC access to the database, but that we will have RESTful services. We already have separation with our business logic. So, we were pretty modular to begin with, but this was a good opportunity to make the solution more valuable to the entities that are using it.
- Nick Mozer: Thank you, now do we have any questions over the phone?
- Operator: No there is... one moment please, one just came in.
- Nick Mozer: Go ahead.
- Operator: Carly Young may go ahead.
- Carly Young: Thank you. Hi, I am from New Mexico, and I'm sorry if you covered this in the beginning – I was a couple minutes late. I was curious if any of the states are using e-signature for agreements, safety planning, foster parent documents, and how you negotiated that piece?
- Kevin Kukas: So, this is Kevin from Washington. I'll go ahead first if that's alright. So, we currently do not have any e-signatures embedded in our mobile apps or in our existing technology. We're in our early stages of implementing that. We're getting walk throughs with various vendors and looking at that. It is a high need

for our agency in multiple program areas, and so we are working to implement that. But current time, that is not part of our solution.

Joyce Rose: Nick?

Nick Mozer: Thank you Joyce. So, the next question that we have is related to training. Did you provide training prior to the rollout of the device? Meaning, working with family, with mobile solution, role-playing, etc.?

Joyce Rose: Michelle, how about you take that one?

Michelle Selinger: Sure, I'd love to. I would say lots and lots of training, and it never ends. So, like I said before, training is only 10%, 20% is reflection, 70% is doing. So, we did initial role out, and then we practiced, and then we came back and reflected – how's it working, how's it not working? We got together weekly in huddles and talked about our biggest learnings together. And then, still as an ongoing basis, I'm running reports to look at utilization and to look at the low utilization to see what does that person need for support. So, we've actually been training in the field. So, there's a lot of things that happen. When you go to sign a document, we do have the e-signature embedded in our mobile application. So, when you go to sign the application – how you help people do that, how do you set up the iPad, do you use a stylus, do you not use a stylus? Definitely trained in the field as well as in the office and continue on an ongoing basis.

Joyce Rose: Great. Nick?

Nick Mozer: Thank you Joyce. So, the next question that we have piggybacks a little bit on a previous topic about pushback. This is more related to users, it looks like. So, how much pushback, if any, did you receive if you chose to support only one device?

Kevin Kukas: This is Kevin from the state of Washington. We didn't have any pushback. Basically, because the devices had already been ... there was no option. It was mandated that this would be our device of usage. I mean, we had some other inherent challenges with regard to not necessarily pushback on the device, but pushback from particular areas or down to units that whether the leadership there, the local leadership wanted their workers to use the device or not, but not with regard to the device selection. Not the platform.

Joyce Rose: So, that may be an interesting question to pose to Mark, given the state-managed, county-administered environment. Being that the county purchased your devices, do you support multiples, and did you get any pushback?

Mark Anderson: We support the IOS platform. And when we developed, it was always developing ... and at the time, of course, there wasn't as many mobile devices that were available that had the inherent security that the iPad had. No, we didn't get any pushback at all. In fact, when we provide other devices, strictly mobile cell phone devices, we're agnostic – we'll support Android or an IOS

device, if it's just to provide communications. And I would say 95% of the people select an IOS device.

Joyce Rose: Okay, cool. Nick, I think we have time for maybe one more question.

Nick Mozer: Alright, thank you Joyce. So, the final question is how far in advance from roll out did you start your countdown to get the workforce engaged?

Joyce Rose: Anybody can jump in.

Kevin Kukas: This is Kevin from Washington. I'll go quick because I heard someone else wanted to answer too. We tried to do the just-in-time approach with regard to our implementation. We definitely did the rolling outreach with regard to usability to finalize some of the designs and some of the approach. But we tried to do it just-in-time, literally. Because it wasn't a required usage, we pretty much did it the week of, as we rolled out. And then we did a gradual roll out across different offices. We didn't dump it to all 45 at one point, because we didn't have enough to support it, so we did a rolling release.

Mark Anderson: Yeah, I... Go ahead Michelle.

Michelle Selinger: This is Michelle. I was going to say we started a year in advance really involving them in the process – had them on the implementation team, the training team. So, they knew what was coming and it wasn't a surprise a guess.

Joyce Rose: Mark?

Mark Anderson: I can just say ditto; that's exactly what we did. One year from discovery, we did implementation involving the people that were going to be affected. That way they wouldn't be surprised by anything that came out the other side.

Joyce Rose: Alright, well I think that we can end our Q&A session, and move on to the next slide, which is a bit of a wrap up. I want to extend a huge thank you to Anne and Kevin and Neil and Christian and Tom and Michelle and Mark. Just as a side, it wasn't a chat question but there was a comment that came in from one of our attendees that simply says, "Thanks, great webinar." So, that's to you folks. So, if you'd like to contact any of the panelists directly, please direct your inquiry to my colleague, Nick Mozer, and that's Nicholas.mozer@acf.hhs.gov. This webinar has been recorded and will be made available online. When it is complete and posted, a message will be sent announcing availability on the Children's Bureau website. So, as we move forward in our series, we are in the planning stage for a webinar regarding the data quality technical bulletin. So, thank you for attending, and that ends the roundtable discussion webinar. Goodbye.

Operator: That concludes today's conference. Thank you all for participating. You may now disconnect.

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