

## Harnessing Technology for Expanded Communication with Customers, Caregivers, and Health Care and Employment Providers

Moderator: Amy Conrick

*Daisy Wall:* This next session is something that's dear to my heart, obviously, being a technology provider, but it's about technology and the changing face of technology and the importance that technology has today and for the future. And it really takes a look at technology from different facets and looking at how you can potentially apply a vision because technology, as Kevin had mentioned yesterday, doesn't solve problems on its own. It does take a vision, it does take processes. And looking at it and really closely. And I think our presenters today all have some unique experiences on that front. So, our moderator today will be Amy Conrick, who's at CTAA, and we have a total of four presenters. Our first presenter is Michele Manley, who's the mobility manager and program developer at MCH, Inc. which is Making Community Happen in Rockland, Maine. Our next presenter is Alan Herrmann, supervisor at Smartlink in Shakopee, Minnesota. And our third is J. Hastain, mobility coordinator for VIA Mobility Services in Boulder, Colorado. And our last is Kevin Chambers, who's the IT Director over at Ride Connection in Portland, Oregon.

*Michele Manley:* Good afternoon. So, how do you get where you need to go when you have little or no resources to get there? That's what my company was facing when they brought me in to the picture. So MCH began its mobility management program with private grant money before they received the two-year grant from the FTA New Freedom program. When they brought me in, my first job was to do an initial assessment of what options were out there. And they were limited. So, it was apparent very quickly that we would need to explore other things.

This is a map of the area that I work in. And the purple where it says Coastal Trans is my service area. And if you'll notice, this right here is Route 1. This is the only major route that runs through there. And this is 295 and then 95. And there's only one bus, the Concorde Bus, that runs up route 1. That's our major public transit. Coastal Trans itself does have some public transit, but it's not a fixed route per se. Down in the Brunswick area, just above Bath, we about two years ago put the Brunswick Explorer in there and that is a fixed-route system and it's going well. But then you have the problem of what do you do after hours when the fixed route is no longer in service? So, Rockland is probably three-quarters of the way up in our service area. That's where my office is out of. And that's where the ferries come out of because one of the biggest obstacles that we face in addition to being very rural and not having public transit that goes into the rural areas, is we have islands. Vinalhaven that you see right there is about 14 miles off the coast of Rockland. Beyond that to the right, which I couldn't get in the slide is Mutangis and that's 20 miles into the ocean. There are ferries once a month in the wintertime. I think it's every other week in the summertime. Quickest way to get there is by plane. It's also the best way. That being said, not everybody can fly and buses don't travel across the ocean so that's a problem.

So wanting to assess what was going on involved local businesses in how to solve these issues, I went to the taxi companies. It was pretty much my only option. And the transportation coupon program was born. So, what I did after much thought was I negotiated contracts with these providers so that they would transport all of our TCP, or transportation coupon clients, in exchange we would take a small admin fee for doing that. But the idea was to grow their business exponentially, and that I've done and I'll show you in the end. So, the part on the right-hand side there is part of our brochure, saying how we started out as serving people with disabilities but now we can serve seniors, since the New Freedom grant has been revamped. So, clients of the TCP are able to use the program for any purpose. They can

use it to go shopping, visit friends or family, go to the beach, see their health care professionals or even go out for ice cream. The program was developed to allow its users affordable access to transportation while enhancing their lives and maintaining their independence.

So, this here is just a quick slide of the application that I created. It's a self-declaration where if they have a disability, they disclose it. If they're on SSI or SSDI, that's an automatic qualification. That is what our IDs look like. So, the process is they apply to the program, once they're applied, they get an ID card created for them. I send it to them along with rules of the program. They read it, sign it, and send it back to me stating that they understand how it works. And then they are free to use the program.

So, the way that it works is a client will request a ride. Again, this is all about their independence. I have nothing to do with arranging transportation once the clients are approved. So, they call the taxi providers and arrange their own transportation of where they need to be picked up and taken to. The taxi providers disclose how much the ride costs. And then the providers will log into a secure website to ensure that the client has funds available. There's no need for the providers to invoice because the website will generate the invoice; it's integrated with our EZRides dispatching software, so what I do is get a download from the access database and I print that off and send it to them with a check every two weeks. Providers can also go in there and check their own balances: the rides that they've been given for and download it into an excel spreadsheet.

When a client gives me money, I open up a screen that looks like this. This is an actual client screen, but I've blocked out their information. What I do is I go to this button over here, where it says coupon, and I enter the amount of money that they give me. So if they send \$50 when it's entered in there, it's automatically matched in the software. So there's automatically \$100 applied to the client's account. So once it's in the system, nothing needs to be done after that as far as entering the money. And you can make notes as to how the payment was done.

What you see in the black there is where the providers have gone in there and entered in for rides for the client. This screen here is what the provider sees. They log into a website, a secure website. They enter in the client's ID number and the amount of the ride that they're requesting, the purpose. That is also used to gather information for me. It's a drop-down menu, I can't show you because it's a still shot, but the choices are shopping, education, health care, social, etc., and that way I can track where the money goes and use it to quantify information for future funding. This is the bottom half of that screen where it shows the rider, in this case Sponge Bob Square Pants, and where he rode to and from and what he was charged.

In January, the program was going so well, we added the convenience of accepting debit and credit cards. We can do that over the phone, which saves the clients postage and having to wait for credits to be applied to their account. Previously what we were doing, and we still do, is clients will send checks or money orders in the mail and I can apply them to their account that way. But the convenience of a debit and credit card has been incredible.

Clients are also able to check their balances online if they have internet access. And that helps them to know when they need more money added to their account. The other thing that we can do is accept payments or donations from other organizations or private donors on behalf of clients. I had a church send me money last week for one of their church members, and I applied it to their account. What's great is that for any donor, because we're a 501(c)3, it's tax deductible as a donation, but it's also matched. So anyone donating \$100, it's actually worth \$200 to the person that they're donating it to. So,

it makes a considerable difference and it's a great marketing tool. We can also apply payments to gift cards as well.

So, this is the screen that the client will see when they check in to check their balance to see how much they have available. This is how the coupon program started. Not fun. This is a coupon book of ten, very very, very time consuming. It was great to get the program off the ground, but I knew it wouldn't work well as far as -- if you can imagine a \$300 trip for someone, because, remember, we're in a rural area and it's quite costly to go places, so now you have to count these coupons, the providers count the coupons, the clients count the coupons, you have to reconcile them. I don't need to tell you anymore. This is the new way. This is with the credit card. This is what our gift cards look like.

In 2012, the impact on the customers in the first year was that the TCP was able to provide 4,094 one-way rides to its users. In April of '13 when we became automated, meaning no more paper coupons, it's virtually 95–98% green system, meaning not green money but green paperless. And it's easier for the clients, the providers, and the TCP Staff, a.k.a., me. Currently the TCP Has 463 clients with a dozen or more waiting approval. And so far just this year, we've already done more than that. We've already done 4,658 one-way rides. We're averaging about 1,000 a month. Growth of local taxi companies has been exponential, as I promised them it would be. Some of them have added additional vehicles to their fleet. Some have added the accessible minivans, which also increases the amount of people they can serve. Merchants are happy because people are getting out into the community and spending money. More seniors and persons with disabilities are getting out there and they're enjoying their life. One of my favorite stories to tell is the little old lady that goes and plays Mahjong every Thursday. That's her thing.

This is a letter that I received from a client. I'm just going to go through it really quick. "I think the coupon program is just what I needed and I enjoy it so much, it helps me to remain independent. And I like that because I have a hard time getting on buses, as steps are usually too steep for me to climb. I've had a lot of knee surgery, including two knee replacements and one long back surgery. So you can see this program does a lot for me. So, I sure hope it continues and I'm having increased health problems right now and need, and my need could really increase for the coupon program. So, I'm hoping that you will continue this wonderful program as I can't say enough of how it helps me in my daily and weekly life. So if there is a Godsend to me, I would do it even if it had a monthly fee if the cost was reasonable so you can keep this program going. I would benefit from it. I would think others would also."

And these are just little notes that people sent me when they send me money, they like to put little notes in the cards. That middle one there is kind of cool. I had a man who was giving respite to his brother-in-law and this program helps him, too. Because now the brother-in-law can get to his cancer treatments and where he needs to be and his time is free. "Dear Michele. Well, it seems my mom is using the taxis. What a great thing for her to get out of the house. Wonderful. Thank you for your help." And, lastly, is this one, I've really enjoyed -- I've really appreciated this service but didn't realize that I enjoyed it so much. Please credit me soon."

*Alan Hermann:* Good afternoon. I'm Alan with the Smartlink Transit. Basically covering the two counties just southwest of here, Scott and Carver Counties. I welcome you to Minnesota.

So, Smartlink Transit basically is a service that covers, again, those two counties with those approximate populations and so forth. As you can see where they're located in Minnesota. As far as coverage, as far as square miles, we are also part of what's called a seven-county metropolitan area for the state. So, as

you can see, those are the other counties that are included in that type of service. These are the types of services that Smartlink provides for its citizens. First there's the dial-a-ride, which is a general public, no qualifications, anyone can request anywhere to go from visiting to the casinos to any type of transportation that is needed from medicals and so forth. There is no qualification piece. You just call up and it's all based upon availability for your trips. Another part that we serve is a circulator service for the city of Shakopee where we run just a service that a bus just circles the city, same route all the time, it's a flag stop type of service, so if they want a ride, they flag it down. The route travels in the same 12 hours a day, just running around in circles.

Next piece is interesting, we provide a lot of human services trips, both myself and Troy Beam, who's the manager, had our roots in the human services pieces of the county. That really gave us a lot of insight into the needs and so forth of the human service client and really helped us understand that type of client. It's not a general public person. They need more help than that type of stuff. So, it helped our understanding of those types of services.

We also do the ADA services, Americans With Disabilities. That's a contract that is, again, just in parts of the two counties. Again, that is a qualification type of service, so they have to be qualified for Americans With Disabilities. We also run, answer phones and so forth for the Blue Xpress service, fixed route service. The cities of Shakopee and Prior Lake, we pick up citizens at a central location, take them to the downtown area, and back. Another service actually provides it but we answer the phones and so forth. So our intake is part of that process also. And, last but not least, Medical Assistance, or NEMT, that is where we are both the intake piece and we are a provider as far as public transit is concerned. We can provide volunteer drivers for this service, and also we have providers subcontracted under us for things that we can't do. So anything that does not fit in our system or anything like that, we actually subcontract to other providers.

And then we also actually take care of the self-drive people. So, that's another piece that was a little catch phrase for us, it was not a easy thing to take on, but we managed to come up with a system that works pretty good for us.

Now, as far as the mobility management piece, again, this is how we've kind of tried to tie these things together. How can one customer service agent answer the calls basically on all these different types of services? So, we've come up with that system saying, okay, customer service, you are going to be able to handle the Medical Assistance trips. Here's the ways that we can handle that type of stuff. ADA things are qualified, and here's the rules associated with those types of things. And then dial-a-ride and also the human services fall into that also. So all those things come into then our transit scheduler. And then they input all that information into Trapeze, which is our scheduling software. Then the information is sent out to mobile data computers. Every bus has a mobile data computer. Basically a computer for that driver. The driver sees its next trip, they also have a GPS navigation system to help guide them to their next trip. And it's worked out very well. It's really on-the-fly dispatching. Trips can be taken off immediately, trips can be put on immediately. So, people can get last-minute trips, people call in, same-day trips, last-minute trips. You know, I forgot some stuff at the store, can I get back to the store? Absolutely. If it's available in the system, we are able to do that type of trip.

Now, what does this mobility management piece do? As you can see, Scott and Carver Smartlink Transit, what we've been able to do is actually by a combination of all these services provide more passenger trips per revenue hour than our peer counties in comparison. So that's the one thing we kind of pride ourselves in that we have been able to kind of combine all these services and use those types of things

to our advantage. Here's the breakdowns, so forth, as to the passenger trips that we provide. Again, now this is just the dial-a-ride stats, so it would not be the Medical Assistance. And those types of things.

But, as you can see, we're very proud, again, of our fixed route solutions. Basically where we can connect to a bigger type bus system, our on time performance, again, 96% range, and, yet, a very low denial rate. Again, as you can see, one of the lowest ones in the region. And, yet, we are providing, as you can see, almost twice or three times the trips that other counties are providing. Again, we also like the fact that the no shows and so forth are very low. We pride ourselves on the fact that we try to do the best thing for our clients. You know, if we have the capability, they're not showing up, we try to give them a call, try to engage them, what's happening, so we kind of look for the care of that client also.

So, kind of jumping into the nonemergency medical kind of piece. In 2010, we decided as a county to take on nonemergency medical transportation (NEMT). What the state had done before was to have a broker-type system that did some rides or I should say administered the rides, did not provide rides, and at that point the state said, we're not going to provide this for you anymore. Counties, it's up for you to decide how you administer and run your own NEMT system. So, we were in a very unique position because we operate and run our own transportation system and, yet, we are county employees. So, we sat down and looked at, and asked, how many trips are actually being done out there. And, as you can see there, between the two counties, about 160,000 rides in that time frame, and what the provider or what the previous provider was charging for just the administration of the trips was \$5.72 per trip. So it's costing these two counties close to \$900,000.

Now, when we took it over in 2010 and then statistics through June of 2013, after the merger piece, the cost was \$2.12 per trip, that is basically the cost savings and that's not just to the state—the state is more of a pass-through—but we're saving the federal government money, we're saving the counties money. We're also giving the client a central location to call in and get the service that they need, even if we can't provide it, we are giving it to some other provider to provide that same type of trip. And as you can see, the cost savings for that service based on that type of thing. Now, back in 2010, we said, okay, the Medical Assistance (MA) system is working but there's a lot of manual processes that we had to go through: there's the recertification piece on a monthly basis, how do we keep track of that. We're actually spending 3–4 people per month the 1st of the month, around there, and eight hours per person, so 24–30 hours each month just updating our MA Clients. So, that was one of our issues.

We also had the communication between us and the providers. You know, okay, we fax it over to you. You accept it. Those types of things. It's a work in progress. It's a hard thing to keep track of . . . if we can't do this, somebody else has to, how do we get that done for that client, etc. So, what we looked at was the MET [Metropolitan Council and MnDOT and also Department of Human Services and said, can we come up with some sort of a data warehouse that helps us kind of get everybody on the same page as far as data collection. And in this type of a warehouse solution, any provider, even if they are a small provider that's entering data by hand, could enter information to this data warehouse to a very automated process as our own that Trapeze automatically feeds into this warehouse and gives you information on passenger trips, revenue hours, service hours, miles traveled, all those types of statistics. And, in fact, in our type of case, we are kind of a little different that we're a little suburban in one part of the county and very rural on the other, so we have to separate sometimes those types of trips, actually, for MnDOT purposes and find out, okay, how much of our service is actually in the suburban-type area and how much is in the rural. So, again, this warehouse has been able to help us with those types of things. Again, so what we're looking at was how can we use this system for the purpose of reducing manual efforts and streamlining processes.

We also wanted to look at the coordination piece, again, between the multiple agencies. For instance, MnDOT might ask for a certain type of report, but MET Council's report is a little bit different. How do we call -- as we always say, how do you make sure a trip is a trip is a trip? You know, so everybody's defining the same thing in the same way and making it very simple. So, the project concept basically is the fact that we have, again, the client requests. And everything kind of coming into that riding the scheduling operational database, which is Trapeze. So we still have accounting to take care of MA certifications, the clients, our actual county transit ourselves and actually the third party. But then the ride scheduling software needs to talk to this data warehouse because we're going to use the data warehouse on the financial side. So, Trapeze could not do that piece. It could not connect to . . . for instance, we use Lawson as an accounting-type software, and Trapeze could not do that, so we had to have something basically building a bridge of information between those types of things.

So, in that type of case, what did we get out of this? We were able to in this type of system we now had the ability to send out a trip to the third-party provider. They can automatically basically accept all the trips or reject the trips in just a push of a button. Then once they've actually done their trip and so forth, there's another automatic system that hooks up to this data warehouse but then to our Lawson system that actually pays them with, again, a push of a button. So, the provider is getting a much quicker turnaround for what they want. We are getting a quicker answer for what our needs are and the clients' needs and that process has really been streamlined.

We also looked at the ADA and MA certification. We now send a file to the state on ADA. The state checks that certification, sends it back to us through the data warehouse, the data warehouse then downloads it into Trapeze, and now we basically eliminated about 30 hours per month in this system by not having to do that on a manual-type basis. It's now automatic. And it's a very streamlined process. Works out very well.

So, what does the future hold for this? That was just kind of the conceptual pieces of this and how we kind of used it. The way we kind of looked at it was, okay, can this then take that same type of technology and now that it's in a central-type warehouse where other people can see, other providers can see, can there be a trip sharing concept? Can there be Expedia for transit? So, in other words, can a person from Duluth, Minnesota, look at our system, say, oh, if I get to Minneapolis VIA a train someday, I can get a hold of this transit system, book a trip there and now I can get to the casino back and figure out my trip basically just like Expedia does. So, that's our hope, again, that's how we can kind of move forward with this. It's still providing the provider coordination piece. DHS has been mandated to look at some sort of a system that kind of provides this same kind of data and how is that going to be used, because they have been pressed by the legislature saying, okay, you, DHS do not know what it is that you're getting. You have no idea how many trips are being provided. What kind of service is out there specifically? You know how much you're spending. But what are you actually getting for that dollar? So, that's what they're looking at also. And then, again, another way for us to be able to move that system forward as a statewide type of system.

*J. Hastain:* I'm J. Hastain from VIA and I'm here to share with you a little bit about our pretty exciting coordination and technology project. So, at VIA we provide 138,000 trips for more than 2,000 individual riders. And we provide accessible, customer-focused driver-assisted door-through-door transport. We also provide travel training and mobility options for people with limited mobility. Here's who we serve as part of VIA. People with disabilities, older adults, people in low-income situations, the general public. We also operate earned income contracts for RTD (Regional Transportation District of Denver), which is

essentially the public transport system in the Denver metro area. So, part of our RTD's service is Call-n-Ride (later on in the slide it's referred to as CNR). Call-n-Ride is a curb-to-curb public transit system, operated in a defined boundary area, usually in an area that has a park and ride. Drive requests are taken directly by the driver or drivers can schedule trips online. That's just information about the buses that they use. And here are Call-n-Ride's markets and services. They work with the general public, seniors, persons with disabilities, specific geographic coverage, lower density, primarily in suburban areas. And the service configurations include on demand anywhere within the area of response: they're feeders to the transit network, they have scheduled checkpoints and zones, and they also operate flex routes.

So, our pilot program is a coordination and technology pilot program using automated, mobile electronic manifests and communication technology to coordinate independently run demand-responsive service in the city of Longmont. This slide includes a breakdown of the money in the grant funding. We were given a two-year grant in 2010 and then also received additional funding in 2012 and again in '14. So the next bullets below that are just specific breakdowns of how the moneys came in.

Here are our expected outcomes. Especially interesting here, the last two bullets, what we really wanted to do with our vision for the project was increase efficiency without having to add resources. So, what we did was basically hone in on vehicles that were at the same locations, let's say, at the same time but they were from two sister organizations, two different organizations. And we were looking at how we could maximize efficiency by using that one vehicle to pick up those two trips. And then leave a pocket, an open pocket, to address denials or whatever on the sister service.

As you can see here, we're pretty interested in efficiency. It's one of our primary objectives here. And what we found is that the bus sitting there waiting without a trip on it is bus revenue hours that we still have to count. So what we're really interested in trying to do is fill up those spaces with clients who need trips. In order to make this work as we've progressed, we established an advisory committee, we recruited partners in technology, consultants, developers, recruited a mobility coordinator, that's me, kind of made a lot of other things happen, procured and developed technology. Additionally, the development of configuration and the deployment plan and we deployed technology, evaluated, and monitored the program. Development and distribution of customer surveys and marketing materials, which we found really useful in revising the program as we've gone along. And we've also found ways to develop and track performance standards.

Now, here's a little bit about the Call-n-Ride service in Longmont. There are two vehicles available during peak times and one available during nonpeak. Customers, like I said earlier, book trips online or they book trips directly through the driver. And now for VIA, we currently have five vehicles operating daily within the city limits. Two of the five are designated as coordination vehicles. And VIA trip requests are scheduled to all of the vehicles, including the two coordination vehicles. So going deeper into daily process here, any VIA denials were passed on to the Call-n-Ride service system to see if there were available vehicles and open times. As well as the inverse, Call-n-Ride denials were assessed and we saw if we could put them on VIA vehicles where there was availability. Cancellations were also identified for both services and the space was made for same-day requests.

This slide encompasses the vision of this project. Into the future, our steps are toward what we refer to in our system as the Orbitz model, similar to what you were talking about around the Expedia, that's the dream of utmost efficiency there. But what we've been able to do thus far is create an import/export

two-way project, basically, that our company and our sister organization can share data. And that's been made possible through technological interfaces and enhancements as well.

So here's the technology that we've been utilizing for our process here. We have RouteMatch scheduling software at VIA. Real-time scheduling, trip verification. We use tablets. We have AVL/GPS [automatic vehicle location/global position system] location/mapping. Compatibility with other software and customize and add updates.

And these are our current accomplishments. When we were initially using this PowerPoint to talk about things in the beginning of our process, we'd only outfitted the fleet with six mobile devices and installed two and we're currently in the process of outfitting the rest of the fleet so that all of the trips in that area can coordinate and be moved on to all of those vehicles. So it's a big expansion, and we're excited about it. And we've been able to make it happen because we've had a lot of success. So if we follow this blue line over here, we see pretty steady increase we have going on. Nice, sweet climb. So we report on this as a pretty constant 30% or above increase that we've had, which is enormous. And really exciting for us.

So, this screen just shows one of the interfaces that we work with. In this screen, which we call agent booking, it's used for clients to book online and it's also used for VIA agents to book trips for coordination clients. We use this as a basic interface to put VIA denials into Call-n-Ride system, since essentially we're working two different systems that have no way to talk to each other besides interfaces or portals. Kind of creative approaches.

So now let's get into the technological specifics. Here's what we have working. We have internet connected server and mobile tablets, cell phone voice and data communications, automated scheduling applications on servers and tablets, our tablet displays and manifests, we have real-time mapping, we also have web server database for service setup, transaction, etc. This is an example of the tablet that we use. What we're using are really durable tablets and because of the day-to-day processes that we go through, these tablets work for us, they're very durable.

So here's a screen shot of what the driver sees, and information is recorded with the click of stylus. This results in the real-time electronic data collection, which makes the import/export processes much easier and cleaner. Also included is obviously the GPS, which is very useful for drivers. With the implementation of any new program, there are always barriers. Anyone who's tried anything innovative has run into that. And I think in some ways in the past it's what has made people shy away from trying to think in creative and expansive contexts about what's possible. But what we found with the barriers that we've come upon, for example, Call-n-Ride, it's part of a large transit system and they're used to doing strictly curb-to-curb, almost in a way like we're driving on by, so put out your hand and grab on. And that's very different than what VIA's done very sort of focused on door through door assistance of clients kind of a situation. So there had to be an adjustment in the sort of cultural norms, not that either service had to trim back anything that was essential to each of their protocol, but in the places that weren't so -- I mean, if the pickups still get done on time, does it hurt anything to have a Call-n-Ride driver stay for two minutes versus rushing on by? No, not at all. So what we found is in focusing in and addressing some of those typicalities or norms of service and expanding them, there was much more overlap that made systems that seemed like they're fall apart actually kind of closer in family so that was something that was really helpful. We're still working with fare structure. To be honest, interestingly enough, RTD, who is a for-profit project, they decided in the name of increasing efficiency and in the name of doing more trips and being able to report on those trips, they could make fare structure and

fare differentiation and how anal attentive fare is tracked slightly different moving forward with the process. That's been helpful for us and no one is suffering on the money end. So I think that's also been a little bit of a culture shift as well. We don't even need to get going on the car seats there. You see that. That's still, whoa, we're trying to come up with creative options for that. Here are future goals and objectives. And it's important, obviously, all of you know that we don't just gloss over the first bullet here. What we know about grant funding is that projects continue to be funded to the degree that we report and keep track of things with fidelity so we really strive to do that. To recap, there are all kind of barriers, potential barriers, in coordination. But what we found is that with willingness and with vision, there are as many creative ways to approach those seeming barriers as there are barriers and, so, we've been just really excited to take it forward and we're currently looking at as an organization, looking at how the model that we've created in Longmont will assist us in including other service areas and continuing to grow the vision but also seeing what we might need to add in order to continue to be inclusive of the areas that we want to invite into the project. So, we are currently running the kind of base level now of a coordination with Call-n-Ride, VIA and ADA so that's where we're at with that. I look forward to any questions.

*Amy Conrick:* So while we're waiting to pull up the slides here, I had the privilege of being out at VIA's offices about a year and a half ago. I actually saw this. I actually saw the screen and you can see the scheduler pull one trip and then pull another trip so you've got RTD Screen, which is the Call-n-Ride, and you've got VIA's screen and you can physically see the trips moving between them because they've crossed that barrier of allowing the data to talk. So it's very impressive. So thank you very much.

*Kevin Chambers:* Well, I'm very excited to be here back in my home state. I actually was raised in Duluth. Although I'm now in Portland, Oregon, and work for Ride Connection. So this is really great. I feel very much at home and very welcomed by the state and all the Minnesota folks here who have been doing things.

So, the topic I was asked to present on is meeting customer needs through the enabling power of apps. And I want to start off saying that I'm not going to talk about any existing apps out there. I think there are a lot of worthy products out there. I'm sure when you go to the vendor hall, I encourage you to look at them and explore them, and I think there are some great things out there right now. What I'd like to talk about today, however, is more about apps, and here's where I find out if this works, apps as an indicator species.

So, when we talk about mobility management think it's sort of part and parcel of the whole idea of mobility management is to create new ecosystems and new relationships and disrupt existing business models or just respond to the fact that our business models are being disrupted and respond effectively. And I think apps are one way we can evaluate whether we're doing a good job with that because we simply at this point cannot operate without effective technology.

So, I want to start off by taking a look at one example of an app ecosystem. So, in Portland, we have our fixed route service. That's TriMet. TriMet has a page on their website, this is [TriMet.org/apps](http://TriMet.org/apps), and this is just a screen shot, so I can't scroll through it here for you, but there are 55 apps that are related to TriMet data, none of which -- there's in the upper right-hand corner, that's about ticketing, that's a little different, but everything else on this page of 55 apps was not created by TriMet. So, next I want to show you the app page for ride connection. This page was intentionally left blank. So I'm being a little cute here because, actually, we do have some fixed route services at ride connection and through a state program we've gotten those services on to the general transit feed spec, so we actually show up on

Google transit and other apps that use the general transit feed spec. But for our demand responsive services, for our shopping shuttles and so on, guess what? Big zippo. Why is that? I think there's a lot of reasons, and I don't have time to go into every single one of them, but there's a key one that I think is instructive and I really want everybody here to come away with having an understanding of. And that's around this term called APIs. So APIs are application programming interfaces. So, wonky term, but, actually, really really important because when people say, I want an app, I think what they're really saying is, I want an API. And I'll explain why as I go along here.

So, an API stands in contrast to a user interface. So user interfaces, my screen right here, my keyboard, all that, how I interact with a computer as a human being. APIs are how one computer gets to interact with another computer. Right? Machine to machine communication. So, if you have an app, if you've got your phone right here, it's a machine, in order for to do anything of interest, it needs to be communicating with another machine. So you need APIs Okay. So, that's the key insight I'd like to share and talk a little bit more about as we go along here.

So, when you get APIs, you can do things like this. So this is one interesting software company, Ridescout. Ridescout aggregates all sorts of travel options and brings them together into one app. So on this screen, I don't know how well you can see this, but this is kind of focused on Washington, D.C., some of the options they include are being able to use a scooter, being able to use car to go, if anyone knows car to go, it's kind of a -- it's kind of a car rental service, but you can pick up and drop off the car at any moment and within a certain zone and, so, car to go, they provide to anybody who follows their rules, which are not onerous, access to their data. Through an API the scooter company, I don't know anything about it, but they provide an API. And Ridescout says, well, we can use that, and, so, I'd be surprised if there's any money passing hands between car to go and Ridescout, right? I think there's probably just agreement that we're going to play fair with one another.

Here's another one. Spotcycle, this is really cool because I've actually used this application. So, suddenly it's really easy now, a lot of big cities, to just hop on a bicycle that's at a kiosk somewhere and go tooling around for a few bucks. It's right here in St. Paul. It's in D.C., it's in New York City. So, all those services, they furnish an API And there's an application out there, Spotcycle, which is on my phone, which has been great, and I can find out where the nearest station is, I can find out how many bicycles are on that station, and then I can go there and then I interact directly with the kiosk, this doesn't actually do booking for me, but it will tell me how I can get to one. So, that is another example of an API

And a final example here, everybody's talking about Uber, so, this is a screen shot of the Google maps app. So they just added a few weeks ago a new travel option, so they've been giving travel directions for a while how you can get to a place by car, by bus, bicycle, walking. And then for markets that have it, now you can also see that there's an uber option. So you can see it down there at the bottom, I kind of put some arrows there, you can -- it will tell you kind of how quickly you can get to your destination VIA uber. How does uber provide that information to Google transit? An API, exactly. Exactly. Okay.

So, you see that when people say they want an app, they're really looking at the tip of the iceberg. Right? That you're seeing the tip of a whole process that's going on underneath. That's a smartphone at the top of the iceberg there. And I'm really excited that I get to speak at the very end of all this because there's so many good things that have been happening already, talking about design thinking, the center for innovation for Mayo clinic, I loved everything they said, I love everything that's happening around design thinking because you don't get effective technology without effective reflection and systematic process around what is it you want and how you're going to get what you need.

So, when you see this design, just imagine everything we've been talking about, everything that the center for innovation was talking about, and this is very linear here, it sends upwards, but it's very iterative, it's very nonlinear, really, but at the end of that, you decide how you're going to solve a problem with technology and now here's the takeaway, I think if you are going to have a problem that you want to solve with technology and you don't include in your RFP. Or your spec some aspect of how you're going to expose that technology to the world under proper rules, under proper agreements, with an API, you're missing a huge opportunity. So there's some examples we can use when we're talking about it.

So, how do we create APIs? This is not something we have a lot of experience with in the industry. But there are some really great models that we can use. So, earlier I was already talking about the general transit feed spec, that's not technically API, it's more of a static data format for describing fixed route services. But there's a whole model about how the GTFS got created and how it's grown that we can talk about in a little bit, but it's very organic, it was very doable, it didn't involve multimillion-dollar budgets. It involved key stakeholders who understood their needs and end-gaming fully with, in this case, Google was the main driver behind it, but the other actually main driver at inception it's grown hugely since then was TriMet. TriMet reached out to Google and said, you've got these revenue directions, where are your transit directions. They said, oh, well, that is a great idea. Why don't you send us your trip data or your schedule data. And, so, they did. And they essentially took a bunch of data tables, turned them into text, put them in a zip file, right, so they can all be in one file, e-mailed them to Google, and to this day, the general transit feed spec is a bunch of data tables in text, zipped together into one file. So, it wasn't like it took some Einstein to create this. It was a gentleman in need -- it was a need that developed very organically but developed into a very transformative technology.

GTFS real-time, that is a API. You can talk about what's happening in real-time around routes, where the bus is, real-time arrival information. Another process that's been more recent, which is more relevant to what we do is that being able to describe flexible transit, so, fewer demand responds, deviated fixed routes, collector services, all those kinds of things, we now have a proposal that is comprehensive that can describe in a static way, not in a real-time way, but in a static way how the services work. In Oregon there's ruminations about starting to take our services statewide and put them into this new proposed format for analysis sake, not for sort of public dissemination or putting on Google Transit yet, but things are moving along. And I think every state should be looking at that. But there's a lot of differences between the GTFS and what we do and primary among them is security. So, whereas, TriMet and all these other transit districts can talk about open data and how great it is, we can't really talk about that for a lot of our data. Some of our data we can. Some of our data we can actually make it public. Obviously general service information we want to do that and that's where the GTFS flexible is wonderful but a lot of stuff we can't. We're sort of a cross between the GTFS and electronic medical records. So we've got some stuff to figure out.

But that stuff can be figured out with an API. APIs can be secured. APIs can have two factor authentication. APIs can deal with all the ins and outs that we can actually still talk to each other and do it in a way that protects our customers' information. So, exactly how we're going to do that is going to take some time to figure out, but one of the great things about the whole mobile kind of coming late to the mobile app party is we've had a lot of people who figured I -- a lot of things out for us, including banks. You know? So if banks can have mobile apps, I think we can have mobile apps. Yeah? What do you think? So, that's not an -- in fact, it's already been solved. And for stuff that is public that we just want to disseminate it out there, we don't have to worry, my opinion is, we don't really have to worry a

lot about releasing that data and worrying about a lot of putting it under stringent license agreements. So this is the developer license agreement that BART in San Francisco uses. You can see, it's one page. Basically says it's our data, you can use it, no guarantees, you have it as is. Don't use our logo, don't use our copyright, don't be evil. Right? And away you go.

So, again, we can -- there's a lot of things that have already been figured out ahead of us. So one thing we start talking about is APIs, trying to get people to talk together, use the same language, we get to this conversation about standard. So, standards I think are inspiring to some people because it means you have some guarantee of what things are going to look like. They strike fear into a lot of people, including me because they can often be very rigid and unbending and inappropriate, frankly, they don't fit the use case.

So, when I talk about standards, I'm kind of, it's in quotes. So when I'm talking about standards for data interchange, they're de facto standards. There's no body that's going to say, "Thou shalt have this field named this way and your text field will be formatted this way." What you have is similar to the GTFS process which has been very successful. It's de facto. It's open. It's conversational. It's evolving. And perhaps, most importantly, it's not developed by a committee. It's developed in actual software. So, if you want to have an API, you develop it in software, you release it, you let other people see it. You talk about it. If someone wants to say, I want it to tie my shoes for me, that's great. Absolutely, you can do that. When you have some software that actually does the shoe tying thing for you and you've implemented it, then we'll integrate it into our standard. Right? Does that make sense? So, I think there's a real opportunity for our industry is to take a small vertical fairly siloed market which is what the kind of human services transportation industry has been up to date and transform it into a larger horizontal, open and standards-based market.

So, I had some mixed feelings about using this slide. So I drew this, by the way. I didn't draw any birds because I just couldn't get them right. [ laughter ] but I had some misgivings because I didn't want to sort of trivialize what we're talking about here and say, oh, it's all going to be beautiful. I did leave off the rainbow and the unicorn. [ laughter ] because I didn't want overdo it. But I think the garden metaphor is a really great metaphor. I think what mobility management is about when you get right down to it is moving from this to this. Right? When we talk about mobility management and we talk about connecting different organizations, we're talking about cross-pollination, we're talking about hybrid services, these are garden metaphors. Right? So, not to go too deep into the birds and the bees metaphor, but I think this is really what we want. And it's going to take all of us to bring the skills, the organizational skills that we have as mobility managers and bring it to technologies and have the same high expectations that we have for ourselves as organizations for our technology also.

Some of the main reasons we don't have APIs in our industry is because we haven't asked for them. So it doesn't make any sense to lay blame on any vendors or anything like that. But it is time to start asking for what we need so that we can get to this effect. And, so in this garden, we get to have ourselves, we get to have it was great to hear, and I forget her name, the woman from ride share nation, it's like, yeah, I want ride share nation in my garden also. I want Uber in my garden. I really want -- I want to use the apple metaphor, it may be a walled garden, to some extent, because we want to be protecting customer information, but it also can be welcoming and really reflect our values as mobility managers. And that's really what I think is sort of drives me as a technologist in this industry, is I think it's just so vital that our technology reflects our mission. And I think this is what we can get. So when I talk about apps as an indicator species, when we get to this, right here, we will know we have arrived. Right? So, because we will -- it will be better for the customer because there will be more options and their phone will be the

mobility hub. Right? It's going to be a better market for agencies. I think we're going to get -- it will be easier to get to that sweet spot of the most flexible appropriate and least cost trip available to the customer, save money.

We're also going to be creating -- we're going to have the actual whole -- we can have a community of app developers who are sort of working on their own, they're going to have their own motives, some of them are going to be profit based, some of them are going to be more about just doing good they just want to make it, let it out there free. And it will allow us to focus more on what we're good at. And I think it's going to be a better market for vendors, too, because a richer, thriving transportation community is going to be good for everyone. It's going to grow technology in the whole sector. So, I think the business model for many vendors has been really to maintain that silo as much as possible. And I think that we really need to send a message collectively and transmit it through our request for proposals that we need solutions that are different.

So, I can't give you a quick 1, 2, 3s, for how we can get an app get all these apps, but I think we go through those processes of doing the design thinking, we're going to get some really great technology needs described that then we can start figuring out together. So, with that -- and in the end we can basically make mobility management a platform. Actually make mobility management technology platform that people want to come to us for our information. So, that's what I had to say. Thank you all.  
[ applause ]

*Amy:* Can we keep that slide up? Can we go back to that slide? I love that slide. I love color. That's awesome. Thank you. It's better than our welcome slide. It's been up there all day. It's kind of tired. So we really have learned so much, so much information, so many ideas, so many ticklers and really saw where we can be going in the future. And I think part of the trick, as Kevin said, I think you had a really good phrase yesterday, I'm trying to remember what it was, don't let the technology drive you, you drive the technology. And your point, all of you, your point of really, like even Michele, starting on paper, and knowing what it is you want. Some of what we're talking about up here may just seem completely unreachable to some really small systems with not a lot of cash for developing some of this really cool stuff. Hold on tight. I think one of the things that we can think about is, what are some baby steps that smaller agencies can take now to get their data in a format that when some agency, when a big public program comes out that is going to help supply these apps, much smaller systems, they'll be ready. So those are some steps that we can think about.

*Steve:* okay. Great set of projects, you guys. I'm really impressed. And just wanted to ask j. If she's aware that the Longmont project was in a national study and cited as one of five exemplary national programs? I'm surprised to hear that. I didn't know because it's a recent publication. The question was for the whole group, really. The use of Google transit, hop stop, I just wanted to get some opinions from anybody who wanted to field that question because it seems to be something that small systems can do to try to market their services. *Amy:* so are you thinking more about how do you get your data in the format that you can use in GTFS? *Steve:* I'm thinking about what people think as an opinion about whether it's useful for small systems? Because I'm starting to believe that it can be the way that small systems can get into the game.

*Kevin:* so the question is whether we think that the GTFS is a useful tool? for small systems, with help of their planning departments, if they're in government or other places.

*Kevin:* absolutely. Absolutely. Again, going back to the app environment, you do some footwork to figure out how to describe your services in this formatted way, and suddenly you get all these other entities out there who are going to do the footwork for you of getting out to your customer. I mean, I think the value for effort is just -- to me, is a no-brainer. Absolutely a no-brainer.

*Tanya.* I just wanted to go down to a specific question to Michele about the coupon program. Oh, sorry. You provide the coupon sort of half price, if you will, for the consumers who purchase it. But the other half, how is that funded and how is that sustainable over the long term if it's grant funded right now?

*Michele:* It's through the New Freedom, it's the 50-50 match. So, the client provides the 50% up front, and we already have the grant, so we match it immediately and it's put on the account for them to use. So, if the client -- there's no limit. If a client sends me \$20, then they get 40. If the client sends me 100, they have 200 and it goes on their account. as far as sustainability, we're trying to -- in developing this marketing thing, which I'm saying there's different ways to promote it and to get local businesses and local government to add to this new freedoms, as you know, has been absolved so the portion that we get has been substantially decreased so it's really going out into the community and finding other funding sources, but once you have a Viable program and you can prove it, it's not difficult. I go to rotary clubs and speak. Last week we got an \$800 check and I had somebody go in my absence to speak for me. So, it's not difficult once you can prove that it works.

*From the audience:* Steve, what is this publication that J. and the VIA program has been mentioned in?

*Steve:* It's the Alan M. Voorhees Transportation Center at Rutgers University and it's called a Strategy for Getting People with Disabilities to Work. And there's a section called five exemplary national programs. There was also a national survey, as Carolyn remembers, was done in conjunction with ctaa to develop a national survey.