Dr. Shawn DuBravac - **00:01**

Well, thank you, Paul. I could have listened to you all day talking about me. What I want to do before we go forward is as we think about framing the future of radio, let's step back, way back. 18 hundreds. We are harvesting ice from frozen rivers and frozen lakes in the US. Over 100,000 people are involved in this profession. We have over 25,000 horses that are waiting for rivers to freeze, lakes to freeze. They would cut it into big blocks of ice. They would store it in ice houses on the sides of those rivers and lakes and wait for demand to spike. And then they would ship that ice to places like Chicago, to New York, to the Caribbean. We shipped ice in the US as far as India at the peak of the ice harvesting business.

Dr. Shawn DuBravac - **00:54**

So this is a big industry in the 18 hundreds, and it's big here indiana. Here's some news clippings from Indiana in the late 18 hundreds, early 19 hundreds, 5000 men wait for 12 hours of cold weather in Hammond, Indiana to wait to get involved with Dai's harvesting business. Here we are up north, Winninona Lake, Pike Lake. Anybody know where those lakes are? Right. That was industry back in the day. I also like the bottom of this other. So this is about the time that farmers started to drive to their jobs. And so the person being interviewed says one of the strange sights he said is that all of the farmers driving to work in automobiles.

Dr. Shawn DuBravac - **01:36**

And he said some of the machines are of such a type that when they are parked near the ice house, it gives the impression that some social affair is underway. Do you imagine growing up and seeing this? Like, look at all the cars. One farmer, he said, drove 15 miles to work every day. Can you imagine that? I mean, just seeing this, right? The story goes on to say just a couple years ago they brought bobsleds to work. That's how they got to work. So that's what's going on indiana. In the late 18 hundreds. We are waiting for rivers to freeze over, for lakes to freeze over. We're cutting it into big blocks of ice. This is our profession. Fast forward to the early 19 hundreds and we're learning how to manufacture ice.

Dr. Shawn DuBravac - **02:17**

So no longer do we have to wait for rivers to freeze over, for lakes to freeze over. We can produce ice anytime we want, anywhere we want. And so now we can start to produce it right in Chicago, right indianapolis, right in New York, wherever we want, and deliver it wherever we need it, right? Big blocks of ice coming out of backs of trucks delivering it, cutting off how much was ordered and bringing it into the ice box, it was not the most sanitary of professions in the 19 hundreds. Right. This was the Iceman I used to not understand and why people didn't want the Iceman coming into their house. And then I saw this photo, and I was like, that's why you don't want the Iceman coming into your house.

Dr. Shawn DuBravac - **02:58**

We even designed ice boxes that could have ice delivered from outside of the house. And that's why then, as we move into the 1940s, and especially coming out of World War two, we learned how to produce ice on a miniature level. So no longer did we have to manufacture ice and deliver it to homes, but we could produce it right in the comfort of your kitchen. And the companies that started to dominate this were companies like Frigere, GE, Norge, many of the companies that you will recognize still today involved in this business. Even if you go back to the fifties and sixties and you look at old advertisements, they are touting the ice capabilities of the modern day refrigerator and freezers.

Dr. Shawn DuBravac - **03:45**

You'll see advertisements that say, this can hold 470 cubes of ice, and that's the lead feature that they are touting about in the fifties and sixties. I'm guessing nobody in this room today knows how many ice cubes fit in their refrigerator freezer. We just take it for granted. Right? But that was a defining feature when we started to bring refrigeration inside of the home. So what does this have to do with radio? What I want you to see is that at each intersection, and this is technological transformation, this industry saw two massive disruptions. One from where went from harvesting ice to manufacturing ice, and the second one where we learned to do it at a miniature level and could do it inside of your homes. Two big technological shifts. And each one of those shifts, the incumbent doesn't make the jump.

Dr. Shawn DuBravac - **04:40**

It wasn't the ice harvesters who started manufacturing ice in urban centers, and it wasn't the ice harvesters who started developing companies like GE and Frigair and Norge. But each time we had a technological shift, we had a new company rise to the top. We had a new leadership rise to the top. And that is, I think, the great challenge that all of you face is you're in the midst of a massive technological shock, and you have to make the jump to remain relevant. You have to make the leap to remain relevant, but you also have to continue to manage the business that you're already managing and that ability to work on what the business is in the future while also working on what the business is today is a huge challenge, and it's a challenge that most incumbents can't make.

Dr. Shawn DuBravac - **05:32**

That drives insight number one for you. So I'm going to share four trends, four insights. Insight number one is that leaders have to be able to work on competing time horizons simultaneously. You have to be thinking about all the things that you heard tactical today, metadata and all of these other things. But you also need to be building the service and the product that you're going to deliver to customers in ten years or 15 years. I love all the data that we saw from Fred, all the data that we just saw in the last presentation.

Dr. Shawn DuBravac - **06:04**

And I think what worries me the most is that you see a slow decay in that data, that you're in a bucket of water that's slowly starting to boil and you know it, and you look at the data and you see it, but you say, well, it's still a good, addressable market today. I'm not quite ready to get out of this market. I'm not ready to jump. I'm not ready to change my product or my service. What I'm doing is, okay, right now I've got a market, and that market starts to consolidate and starts to get a little smaller. And so we start to talk about shares of a smaller market rather than talking about the market.

Dr. Shawn DuBravac - **06:44**

And so that's what worries me the most, is we're in this period of massive technological shift, and the product and service that we have delivered, in some cases for decades, might not be relevant to the customer that we need to service in ten or 15 years. And you really see that, I think in some of the social media data that we just saw, that the aged separation on the platforms that they're using is pronounced. And so how do you address an older audience and a younger audience? That's the underlying theme in all of that data. That whole market can be yours if you can figure out how to reach them and how to ultimately entertain them and deliver the service that they need.

Dr. Shawn DuBravac - **07:30**

I also think it's worthwhile now I'm going to focus mostly on radio in the car, but I think it's worthwhile to remember that the radio didn't start in the car. We had to fight to get the radio in the car. Ironic that we are now fighting to keep the radio in the car, because this is an advertisement from 1935, or not an advertisement, but a photo from a newspaper in 1935 where the auto manufacturers were trying to keep radio outside of the car. They didn't want it to be a distraction, and the radio manufacturers were fighting to put radio in the car. And that's actually the history of the Consumer Electronics association, the consumer technology association today. It started as the radio association, manufacturers trying to fight this battle of getting it into the car.

Dr. Shawn DuBravac - **08:18**

But what ultimately, I think won was not this, not forcing our way into that market, but this the best part of your ride. You saw radio manufacturers say, hey, going on a drive is great, but taking news, music and laughter wherever you drive, that's the experience that we're delivering. That's what we really want you to think about, not just going for a drive in the countryside on a Saturday afternoon. Take the news with you, take the music with you, and all of the laughter with you. You know? Good. Classic 1940s Advertisement Right? I think that is what we need to remember. It's the experience that we deliver, not the hardware, not the broadcast signal, but the experience that we're delivering to the end user.

Dr. Shawn DuBravac - **09:07**

So figuring out what that experience is, and I think some of the story around metadata is about delivering a richer experience, delivering a more modern experience. I don't think it stops there, though. I think there's a lot more to come, and I'll highlight what I think some of those things might be. Point number one that I'll talk about trend number one is that consumers are going to see radio differently in the future. And you've already seen a lot of this throughout the day. So I'll be reiterating some of the points that you've seen. The dashboard is getting big and beautiful, and there are lots of people that want to take advantage of that dashboard.

Dr. Shawn DuBravac - **09:43**

So this is technology that has been percolating on the surface and in the model years that are getting set to launch in the coming years, this will become the default environment inside of the car. Right now, it's a relatively expensive add on. You saw the hyper screen by Mercedes. This is about a $7,000 add on. So it's not an inexpensive add on, but it is a supercomputer inside of the vehicle, a single pane of glass all the way across from pillar to pillar. Those vents are analog, so it integrates analog features together with digital features. And we saw several people already today talk about some of what's happening here, but it isn't just what's happening on the dashboard. We're also rethinking information in the vehicle and the experience inside the vehicle.

Dr. Shawn DuBravac - **10:37**

So this is an augmented reality heads up display, if you will, that's projecting in front of the vehicle which way you're going to turn. So it's using just three dimensional space to convey information. Now, imagine we're still trying to figure out, how do I get all my metadata updated? Right. Imagine that in the future, while you're driving down the road in a quasi semi autonomous driving vehicle, that the radio station is not just on the dash, but it's in front of you, and you see it in front of you, or you see other things in front of you. And so the information that we will convey inside the vehicle will go far beyond just the dash. And you're seeing a lot more being projected. This is a display. You'll notice this vehicle from Continental has no dashboard.

Dr. Shawn DuBravac - **11:30**

This is projected on the bottom third of the window, and that becomes the dashboard. So we have examples of screens going pillar to pillar, but you also have examples of vehicles removing the screens. Here's one from BMW. There is no screen. There is no buttons in the middle. There is no traditional presets or dials. It becomes voice enabled. There's a little bit of touch. But what's more broadly happening is that it's being projected on the bottom third, and it's also being projected into three dimensional space out in front of the vehicle. And it can close down, it can open up. So you have the ability to customize that as you want. You can see that it's using the sensors around the vehicle, it's picking up cars, other things like that around you, other obstacles.

Dr. Shawn DuBravac - **12:24**

So there's a lot more information around the vehicle that's going to be conveyed to the driver and to those that are showing up. We talked about the abundance of screens, and I think that trend has just started. Here's just one example from LG, and you can see multiple screens, right? Screens on the side that are controls. You've got a dashboard. If you were in a driving mode, this is kind of a futuristic self driving mode. And you've got televisions that come down and you can watch televisions or use other information. We're starting to add virtual reality into the vehicle, and it's taking advantage of the movement of the vehicle. So the game that this person is experiencing in virtual reality is driven by how the car is driving, using that sensor data to then customize and personalize the experience that they're having.

Dr. Shawn DuBravac - **13:22**

So these are the type of things that you're competing against. Not today. And maybe these things never come to fruition. Maybe we decide this isn't the type of experience that I want inside the vehicle, but it gives you a flavor for the type of things that auto manufacturers and others are thinking about when it comes to entertaining the consumer inside of that vehicle. LG this year launched their first transparent televisions. First transparent OLED tvs are now available on the market. You can go out and buy one. This is a technology that they have been working on for years. I remember seeing it decades ago. Early prototypes and pilots of this had transparent laptops. And the example they showed me was, well, look, if your pencil is behind your laptop and you can't find your pencil, you can just look right through your screen.

Dr. Shawn DuBravac - **14:17**

I was like, well, I can also just pick up my laptop and find my pencil. But that was their early ideas of how you might use transparent screens and how you might use transparent oleds in this case. Now, you may say, why would I ever need a transparent television? What if we started to put it in front of objects? Here you see it at a bakery, and it's got all the information listed. Now, I actually think this is a horrible use case scenario, because if you ever walked into a bakery and it lifted all of the calories right in front of that item, they're not going to sell very many chocolate cakes or, you know, whatever, cupcakes. But what about if we started to show it up inside of a car?

Dr. Shawn DuBravac - **14:58**

And so the windows in a vehicle become computer monitors that you can see through. You could turn them off and make them fully transparent so you could see outside, or you could make them a computer monitor where you have other information overlaid on that. So you could create games that kids play that identify objects on the outside. I actually think this has got huge opportunity for advertisers because Google, as you know, and they've just delayed it now till 2025 at least. But Google is pushing to get rid of cookies, and so first party data becomes more and more important. One use case scenario I envisioned in this is using the sensors of the vehicle. Imagine as if you're driving down the road and there's a car next to you, and the sensors, the cameras on your vehicle, recognize what car that is.

Dr. Shawn DuBravac - **15:49**

And you queue up a car commercial for that car. So you're in the car looking at this car next to you're like, oh, what car is that? And then a commercial for that car is queued up inside. You start to have really relevant, really agile, adaptive advertisements based upon your surroundings. So advertisements aren't sold based upon a time or a day or some other element that we've always used, but it starts to get sold based upon what your vehicle sees, how fast your vehicle is going, all of this other information that could become available to advertisers, could then drive those type of those purchases. You're already seeing that push because all the map manufacturers, Waze and Google and Apple are thinking about how do we sell relevant advertisement space to all of the restaurants or the retailers?

Dr. Shawn DuBravac - **16:45**

And the most relevant information is your location based upon how far you are. But we could start to spread that idea out and pull in all of these other bits of data that then could drive these type of decisions. So these ambient technologies that start to show up everywhere are colliding with what's happening inside the vehicle. And I think that also impacts your fundamental business model. It isn't just that it's a new form of entertainment, but it's a new form of advertising. And if that's attractive to your local advertisers, they get an advertisement for the dealership. As they drive past the dealership, then that's where I think real risks start to set in. Now we're probably years away from that becoming available, and there are hurdles and privacy issues that have to be overcome.

Dr. Shawn DuBravac - **17:37**

But you could see where companies would want to take that technology. I think oems trend number three. Oems want to see radio differently as well. So there's been a lot of talk about how oems and manufacturers are thinking about radio. This is what it's all about. This is what it comes down to. Show me the money they gave away the most valuable real estate inside of a car in the thirties and forties. The middle part of the console, something that's equal distance between the driver and the passenger, some of the most valuable real estate in the vehicle. And they said, you know what, we want it back. Now we're ready to monetize this and figure out how we can monetize it. And so you're seeing that show up in lots of different ways. No, John Deere's not in the radio manufacturing business.

Dr. Shawn DuBravac - **18:30**

But what I want you to see, and Fred mentioned this, I think it was a good tee up. John Deere recently introduced their seein sprayer. This looks like a everyday regular tractor, but if you look closely on it has 32 cameras. That's a 120 foot boom, 32 cameras along the whole length. It can monitor 2000 space as it drives down a field. Now historically, when we would spray a field, we would spray it with pesticides or other things uniformly across the field. Now using those cameras, you can identify the weeds as you're driving down the field and just spray the weeds in real time as you drive down the field. Last year they ran this over a million acres. They saved over 8 million gallons of chemicals by being able to identify weeds and spray just the weeds rather than spray the whole fields.

Dr. Shawn DuBravac - **19:25**

How does that impact us? Why does that matter to us? What I want you to see is how the business model changed. Because I think this is the most fundamental shift. John Deere forever has sold tractors at cost plus some margin. How much does it cost us to build it? How much do we need to make? Cost plus margin? That's how they've sold it. Now, though, they're looking at this technology and they're saying we're providing a lot of value. We're able to save you money on chemicals. So we want to share in that game. So they're essentially leasing this technology at $4 an acre. You've got a 5000 acre farm. You can use this technology and it's going to cost you 5000 times four.

Dr. Shawn DuBravac - **20:07**

If you've got a 20,000 acre or 100,000 acre property that you're working on, same deal, dollar four per acre, because they see that they're producing value and they can extract some of that value from the farmers. I think this is the move that all oems are pushing towards. You see it happening in tractors. I think you're going to see it happen in cars. If I can deliver you value, how can I extract value from that? And so you're seeing it show up in lots of different places. And I'll highlight some of the examples in the car. To me, this is the next big transformation. We're moving from digitization to datafication. And that shift has significant implications for what's going to happen in the car.

Dr. Shawn DuBravac - **20:50**

To put this into context, step back to 1998 when we sell our very first digital television in the United States. At this time, we are all living very analog worlds. Even as late as 2000 in the US, only 40% had home computers. Only 3% of us had broadband. You know, we just saw stat, 36% of households have broadband alone that they're relying on for their entertainment content. It was only 20 years ago that only 3% of us in the entire country had broadband at all. All of that digital transformation has happened in just the last two decades. And to me, the next big shift, the next two decades will be defined by the shift from digitization to datafication. It's taking advantage of all the data, what I call data exhaust from these digital environments and pouring that data back into the environment.

Dr. Shawn DuBravac - **21:47**

And I think a lot of what we've heard today is about the data exhaust of radio. I mean, Xperia earlier today talked about, hey, look at all of this data that we are capturing just by delivering radio. Now, how can we use that data for other purposes? Can we reposition it for advertisers? Can we reposition it for other things? So all of that data exhaust, we pour back into the environment, back into the systems, and that, I think, is playing out in every market. What John Deere does is all about moving. They digitize the environment. Now they're using data to drive business decisions. So here's how it's happening inside the car. This is just a pilot that visa has. So as you're going through your day, it becomes much more transactional. You're able to pay for gas from your vehicle.

Dr. Shawn DuBravac - **22:40**

You were probably steered to a specific gas station based upon any number of parameters, maybe loyalty points, maybe a price point that you were trying to achieve any number of things. Here you are picking up your lunch, you've ordered it from inside your car, probably via voice, and you're able to make those transactions right inside of the voice, right inside of the vehicle, and then have it delivered to you. Your vehicle becomes this transactional mechanism that visa benefits from and that surely the OEM is also benefiting from, and all of that's happening from that cabin experience, from that dash experience. Looking at ways to monetize more of the decisions that are taking place inside of the vehicles. I mean, car manufacturers are thinking about healthcare because when you're alone in your car, that is a HIPAA compliant environment.

Dr. Shawn DuBravac - **23:32**

So your car manufacturer can offer you healthcare information if you're alone in your vehicle and be compliant with HIPAA. They can measure things by how you're sitting in your vehicle. They can measure biometrics. And I'll actually show some examples of what that looks like. Other forms of data. Obviously, Fred and others hit on the subscription services that are showing up. Tesla just lowered some of their subscription services for the basic autopilot. This was 199. They lowered it to dollar 99. Here's some of the things that show up in their connectivity packages. And you see, if you get premium, you get music streaming, you get video streaming, Internet browsing. They're using the opportunity to sell the experience inside the car at an incremental amount. And they're not the only ones.

Dr. Shawn DuBravac - **24:21**

BMW offered a variety of services that was mentioned earlier today around seat warmers and other things. They have rolled back from that. In fact, Mercedes recently said, oh, we don't want to nickel and dime our customers like BMW does. Really? This is Mercedes subscription page. Mercedes is playing by the same book. So BMW tried it and they were aggressive at it. But Mercedes is doing it. Audi is doing it. In fact, this is Audi's chief technology officer just a few days ago. With our next generation of electronic architecture, we will bring more offers to function on demand. And you will see year by year, we will bring new functions in the cars. We are going to sell you services, we are going to unlock services. Those are going to be things like seat warmers, and those are going to be things like entertainment options.

Dr. Shawn DuBravac - **25:14**

So I think, as you and Dave mentioned, developments in Washington Day, you may win that battle. You may get radio mandated in the car, both AM and FM, forever, and they have to give it for free. And maybe that law never changes. But do you win the war? Do you win the broader battle for attention? Do you win the broader battle for transactions? This is where the oems are pushing this. We already mentioned GM said they weren't going to do car play or Android Auto. They do Android Automotive, which, as was noted, is the operating system. So you can have Android Automotive, which gives you all of the Android features like Gmail or YouTube or maps. More importantly, gives it to you natively. So you do see that, in fact, here it says Google built in.

Dr. Shawn DuBravac - **26:13**

So this is from GM's page just today that they're using that operating system and they've got it in their 2024 Blazer EV. Also, the person who made the decision to get rid of Carplay happens to no longer be with GM as of a month ago. So is GM going to reverse this decision? They've opened the door to reverse the decision. Certainly we saw how popular Carplay is android Auto is. Again, those are using your phone, as opposed to Android Automotive, which is built into the vehicle. But CarPlay is also pushing to do more and be more inside of the vehicle. This is the next iteration of the Aston Martin, and this is using the next iteration of Carplay.

Dr. Shawn DuBravac - **27:03**

Porsche and Aston Martin have both signed on to use the next iteration of CarPlay, which will have access to not just the dash display, but also other displays inside of the vehicle. And also Google Auto and Google Automotive are doing multi screens to take advantage of all the screens that are showing up. So not only is this Carplay, but that's also Carplay. The speed and the other dials are also being driven by that. So you could work with Carplay to create a custom interface for your whole interior experience. You could do that without giving up your brand and your identity. It was mentioned this concern that oems don't want to lose their identity and their brand behind Carplay. They could partner with Carplay and really customize that. And that's what Porsche and Aston Martin are doing and other oems will do as well.

Dr. Shawn DuBravac - **27:59**

Now that Apple is out of the car manufacturing business and they spent the last decade trying to come up with an electric vehicle or an autonomous vehicle, they are, I think, going to push even further into Carplay. It will become more influential. Now, Mercedes just recently, this is in the last couple of days, said they're not going to let CarPlay take over all aspects of this. And this is an interview from the CEO again in the last 48 hours. And this is their goal. Right? I won't highlight all of this, but they talk about it being the digital window into your car to the world. It's not just infotainment that, it's a much broader software architecture. We're trying to deliver a much broader experience here. They talk about the Mercedes rolling living room. That's how they see the car.

Dr. Shawn DuBravac - **28:50**

I think that's what they picture that cabin being the living room. So what type of experience do we want to deliver in the rolling living room today? And also at some point, when we do have autonomous vehicles, and that probably isn't going to be tomorrow and that probably isn't going to be next year, but we do have autonomous vehicles already on the road. Arizona has them, parts of California have them. I've ridden in them multiple times. It is a magical experience. It's a little surreal. And you can't figure out how to open the trunk. So that's a whole other separate issue because you're used to people popping the trunk for you. So they have to figure that out. But it is coming. The technology is viable and it will come. It will take some time and it won't replace everything all at once.

Dr. Shawn DuBravac - **29:42**

But what I like to say is technology moves slowly until suddenly it doesn't, until suddenly it's upon us. So maybe it'll be 50 years, maybe it'll be 20 years, maybe it'll be 70 years, we don't know. But it will come. And when it comes, Mercedes is going to be ready because they will have evolved into a full living room experience with all of the things that you would want. I've seen self driving concepts from LG where they put a refrigerator in it, because of course you're going to put a refrigerator for your LG. You're going to put it in there. You can have drinks, you can have other things. That's how they're pitchering that living room. And you also see other companies clawing back some of the control that Carplay has. So this is Toyota.

Dr. Shawn DuBravac - **30:22**

This is an over the air update that's going to come to Lexus and Toyota, where they're going to fix the menu on the left side of the bar so that you can access music, phone, other car features. Carplay, as you probably have experienced for any of you, if you use Carplay, will take over the full screen. Toyota and Lexus doesn't want that. They want you to be able to get out of Carplay and get back to other things. So this is a good sign for radio if presuming that's radio. It is, yeah. You still have two more buttons to push. Yeah. To get back to radio, technically radio. Yeah. So I think that will be a good sign for radio is you're getting some prime real estate back from Carplay as the auto manufacturers pry that back.

Dr. Shawn DuBravac - **31:09**

Okay, final, the final theme, the final trend that I'll hit on is this battle for personalization, because I think this is also a key theme that's playing out today. You can go to Nike and you can order any pair of shoe that you can design and it will show up at your house a few days later. Now think of what Nike's business model used to be. Nike used to say, let's make a few number of models. Let's make as many as we can. Let's make them as cheap as we can somewhere in the world, and let's ship them to every retailer or distributor who will carry them. That was Nike's business model from the seventies until a few years ago. They've actually started to cancel some of the contracts that they've had with distributors that were some of their very first distributors.

Dr. Shawn DuBravac - **32:01**

They're rolling it back. They're going direct to consumer. Today, over 60% of their revenue is direct to consumer through. They've got multiple apps, they've got a Nike app, they've got a sneaker app. So they'll deliver it. And they've fundamentally changed their business model to do more models in fewer volume. So do we have any sneaker heads in the crowd? I'm sure you have teenage sons that have. It used to be that we'd buy a pair of shoes and you'd wear them until you wore them out and then you'd go buy your next pair. And now all our children have like 30 pairs of shoes because it's a different one. It's a new model, it's a unique model. It's a special model. It's a limited model. That's their new business model. We're not going to just sell you the cheapest shoe that we can produce.

Dr. Shawn DuBravac - **32:48**

We're going to sell you 50 shoes so that you have. And that's how Nike gross their model. But it's all about personalization, down to the fact that you can design your own any way you want, any color. You can write things on it. You can do different things. Fred showed this to me. This is about personalization, though. So I left this in here because I wanted to drive home. The point, like, this is about, I don't want just a white car. I don't want just a gray car. I want it sometimes to be purple or yellow or red or. I want it to match my glasses. I want it to match my bow tie. That is a possibility in the future, we can have our car match it. What you're also seeing is that it can match the music.

Dr. Shawn DuBravac - **33:30**

So you've probably all seen where Christmas lights will match the radio station. Well, you could have your car match the music that you're playing and change based upon what you're playing. That's the direction we're going around personalization. So I talked about healthcare. This is an example from Harman, which is now owned by Samsung, where they are building in biometrics. So they're measuring your current environment inside the vehicle, how stressed you are, how anxious you are, how tired you are. It will alert you, obviously, like many modern vehicles, if you're getting drowsy. But what's interesting to me here is that it's adjusting the services based upon how you're doing. So if it sees that you're stressed, it might offer you an alternative route home. Today, GPS gives us the shortest route, and sometimes we're like, oh, why are you taking me this way?

Dr. Shawn DuBravac - **34:23**

You know, I don't want to go this way. I want to go this way because it's trying to route you the shortest, quickest way from point a to point b. But what if that's not the best way? What if I'm stressed out and I need a longer drive where I'm not starting? You know, stopping and starting so much? And can we also pull in the music and have the music sync to how I'm doing? That's what Harman is producing. An environment that measures your biometrics, looks at how you're doing from a physical and mental state, and then offers other adjustments. Windows can come down, other things can happen. So that's just examples of what they're doing. So, as just one or two final examples, we talked a little bit about generative AI.

Dr. Shawn DuBravac - **35:08**

Generative AI is starting to show up into cars, and you saw some examples from the Alexa video of how that works. I want you to just get a feel for what that means for that interaction inside the vehicle and what it means for how we might interact with radio stations. So this is a demo from Nvidia where they've integrated generative AI into a gaming environment. But you'll note that every conversation is unique, and every interaction is unique, and the person can translate voice into, essentially, computer prompts that then allow them to interact with that environment while we're back in the ramen shop with Jim. Except this time, we're joined by Nova, a cybersecurity expert in our cyberpunk player world. Let's listen as these two AI game characters have a generated conversation.

Speaker 2 - **35:57**

Nova, you ever get that uncanny feeling we're like those AI constructs from the old Sci-Fi flicks, but, nah, we're too quirky.

Dr. Shawn DuBravac - **36:06**

The cool thing is, the conversation's different every time.

Speaker 3 - **36:09**

Quirky is one word for it. I think we're just too real to be anything but flesh and blood. You're not wrong, Jin. Sometimes I wonder if we're all just part of some elaborate cybernetic dream. If were AI's, I'd be the one cracking jokes about the singularity over a bowl of ramen. Hi. Long time, no see. You've been hiding in the shadows, or have you just been trying to avoid me?

Dr. Shawn DuBravac - **36:35**

Hey. No, but it's good to see I haven't been trying to avoid you. Just been super busy. How are things?

Speaker 3 - **36:41**

Things are fantastic. Just secured a juicy contract with Zenith and sons.

Dr. Shawn DuBravac - **36:47**

Hey, Jim, you hear that? Nova just landed a big contract. Let's break out the good stuff.

Speaker 2 - **36:53**

You got it, cotton. Nova's success calls for the top shelf celebration. Just don't expect this to become a habit.

Dr. Shawn DuBravac - **37:02**

So, let me just stop there. Imagine now that you're in a car, and today we're thinking about prompts as. Change it to 97.1. Change it to this call sign. What if the conversation I'm having with the vehicle is play me something more upbeat right now. What if I'm not even specifying a radio station? What if I'm just specifying the experience that I want? And maybe this environment, this generative a AI environment, is interpreting that and looking through all the metadata of the stations that I have available to me and in real time, serving up. Oh, we see that this song is about to play or this song is currently playing. This is upbeat. This is based upon our understanding of upbeat. This is what we're going to serve up. So it starts to become a much more natural, intuitive interaction that you're having.

Dr. Shawn DuBravac - **37:52**

And you notice every interaction can be unique and different. But we might move away from these hard, fixed, narrow prompts to something more fluid. And when you look at these younger generations as they use technology, everything is more fluid for them. Their definition is more fluid. Everything in their life is a broader definition. Even gender is a broader, more fluid definition to them than older generations. And so they're going to expect a much more fluid, interactive environment. And so I think today you're thinking about metadata on the screen, but metadata in the future might be what drives listeners to your channel, to your station. One other example. So this is me, obviously, but this isn't really me. This is a copy of me. This is a digital copy of me. What you're about to hear, I didn't say.

Dr. Shawn DuBravac - **38:53**

All I did was type in what I wanted to say, so I created a synthetic copy of myself. And everything I typed it will say thank you for participating in today's dashboard Delight radio innovation seminar. Your presence and enthusiasm greatly contributed to the success of the event. It was an incredible opportunity to explore and discuss the future of radio and the digital dashboard alongside industry peers in it. So I don't speak Spanish, but I had it translate Spanish. All the hand movements, all the gestures, all of that is synthetically created. I also don't speak Chinese. So I think there's a big focus now on AI in creating efficiencies and productivity and driving down costs.

Dr. Shawn DuBravac - **39:55**

But I think there's also a huge opportunity to open up top line revenue growth and imagine in the future you'll be able to deliver your stations in every language that you want in real time. I mean, all of this technology is here today and it's on the cusp of being able to be easily rolled out. So you could have all of your morning shows translated in real time into foreign languages and maybe not delivered over your main broadcast, but you could certainly deliver it through your digital channels or your apps or other ways. So the opportunity to grow your market, I think, is tremendous.

Dr. Shawn DuBravac - **40:34**

Indiana, 5% people speak Spanish, so maybe that opens up your market just a little bit, or maybe there's opportunities to address markets outside of Indiana or to address other markets, so just gives you a sample of where this technology is going. If you were just to listen to that, you wouldn't know that you kind of can tell when you're speaking English. It's not a perfect copy of me, but since I don't know what I sound like speaking Spanish, I'm like, that's pretty good. Does anybody speak Spanish here? I mean, whenever I've played something like this, they're like, your Spanish is pretty good. They tell me they hear an american accent when I speak Spanish because it's using a synthetic copy of my voice that I created. So. And all of this to create this video took me 30 seconds. I just typed in.

Dr. Shawn DuBravac - **41:26**

I typed in, I fabricated the interaction and then just translated it and then put together video super quick. Thank you for participating. All right, let me show you one final thing. This is a new technology from Mercedes called their sound drive. So they partnered with William to rethink how music could be delivered inside of the car. What this does is it takes the technology from the vehicle, the sensors. I talked about this move from digitization to datafication. It takes the data from that, and it adjusts the music based upon the data of the car. So let me let you see, Will. I am talk about this.

Speaker 2 - **42:15**

So this is sound drive. What you're hearing right now is idle. Yeah. This is what it sounds like when the cars steal. So what we've done, we've. So we take in the sensors from the car, the gyro accelerometer, the position of the car. It's being sent to an audio engine, as well as the accelerator and the brake, the steering wheel, the suspension, and gps. Why is that important? And this new Renaissance music is composed, rearranged, and made by simply driving. And the instrument and orchestra is the car. The conductor is you, the driver.

Dr. Shawn DuBravac - **43:02**

Yeah.

Speaker 2 - **43:02**

And every single commute and drive will create something different. Yo, that is freaking stupid fresh. That is stupid fresh, bro. I can't wait to see what other artists, little bells and whistles and tricks and nuances, how they imagine now. You know, it's possible. Why does the song have to be, okay, this part, 14 bars in. I'm gonna do this. Then after four, after chorus comes, and then after the. The course, the bridge. Like, why does that have to be the limitation of imagination when it comes to song creation? That is not a skill. This is. Wow, it brings a whole new terminology to traffic jams. You want to jam it, bro? Like, yeah, I'm jamming.

Dr. Shawn DuBravac - **44:09**

So will I produce the music then? They have a sound driver in the car that's taking in all of that data. And as he turns the wheel, as he accelerates, as he slows down, it adjusts the data. Personalized, customized. Every drive is unique to how you're driving. It might mean that there'll be a lot more swerving. I don't know. Maybe this is not. Maybe this is not the technology we want our 16 year old children to drive with, but it gives you a sense of what they're thinking about, what artists are thinking about, like will I am, and what auto manufacturers are thinking about. How do we, and what do we do with all of this data? Exhaust all of the sensor data, all of this other stuff that weren't really planning to use. How do we incorporate that in other services?

Dr. Shawn DuBravac - **44:52**

Could we customize and personalize music? So I think there's lots of really interesting opportunities to see where this goes, and obviously that has an impact on maybe the type of music we deliver, where broadcasters fit in. So I don't think it means that there isn't an opportunity, but it changes that opportunity, and you have to see where that technology is going. So I'll end there just with this final insight. Just that vehicles are becoming these ecosystems for personalized digital experiences. The living, rolling living rooms, as Mercedes calls them. That's what they're trying to build. What's the service that Mercedes and other oems want to deliver inside of that vehicle? If you text future to 66866, I'll send you a copies of this. Also happy to give a copy of this to Dave, and he can distribute that if we've got a minute or two.

Dr. Shawn DuBravac - **45:43**

I'm happy to take any questions or observations. You just got a masterclass or are you freaking out?

Speaker 2 - **45:54**

What software did you use to create?

Dr. Shawn DuBravac - **45:57**

Yeah, so there's lots of different examples now that one I used a company called hey Gen. So the thing with AI, because we've been playing with it a lot, however it is today, is the worst it's ever going to be. And, you know, we've been playing with.

Speaker 2 - **46:14**

It for about, I don't know, six, eight months, and it's getting better.

Dr. Shawn DuBravac - **46:18**

There's a new thing called Suno that creates music. Have you played with this?

Speaker 2 - **46:24**

Unfreaking believable.

Dr. Shawn DuBravac - **46:26**

I mean, by the way, you don't need a jingle company.

Speaker 2 - **46:29**

Oh, sh.

Dr. Shawn DuBravac - **46:30**

Sorry. The folks at TM just went crazy. Yeah. And then Waymark produced video. So I actually think AI will produce an abundance. Like, any time. AI is driving the cost down in a lot of these markets. So anytime we have seen costs go down in market, we see an abundance of use. You know, the example I always give is like your mobile phone. Early on, the image sensors were expensive. They weren't very good. We only included one image sensor on the back of your mobile phone. What happened when we started to introduce a second image sensor? When they got inexpensive, they moved from a scarcity to abundance. We put that image sensor on the front of your mobile phone. What happened? Selfies, right?

Dr. Shawn DuBravac - **47:15**

I mean, we can argue whether that's a good idea or a bad idea, but selfie was the word of the year not too many years ago, and it created an entirely new industry. One would argue that the influencer market, the influencer industry is entirely driven by the fact that image sensors on cameras, image sensors on mobile phones got cheap and inexpensive and abundant, and so they got deployed widely. So entire industries, I mean, I would argue that's a technological shift. Entire industry was created from that. And so I think AI will do the same thing. It will drive down, maybe it drives down the cost of jingles, but it means that there's going to be a lot more jingles out there. It'll be an abundance of that or an abundance of other things.

Dr. Shawn DuBravac - **47:58**

And so there's going to be the demand for places to play all of this content, to put all this content to work. So I think there'll be a lot more. My example of translations, it moves you from just producing an english show to producing shows in 18 different languages. You could do shows tomorrow in 18 different languages with near real time translations.