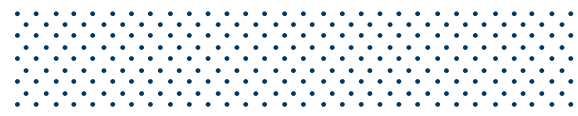


Accessibility Is More Than You Think



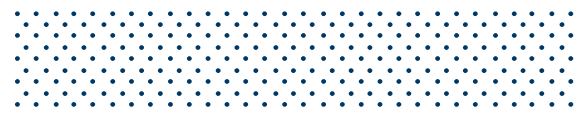
CAPTECH TRENDS | PODCAST | EPISODE 9

**Vinnie:**

Hello, and welcome to CapTech Trends, a place where I meet with thought leaders and subject matter experts to discuss emerging technology design and project methodology. I'm your host, Vinnie Schoenfelder, Principal and Chief Technology Officer at CapTech Consulting. Today, we are discussing accessibility, a term used in our industry to describe hardware and software that enables the use of computing technology for those who are disabled or impaired. And this is not just specific hardware or software like a screen reader but it's approaches and patterns that can be and, quite frankly, should be applied to all software development. Today I have with me, Caitlyn Mayors, and Virginia Booth, both senior managers in our customer experience practice, and both have a lot of expertise in this area. Caitlyn is out of our Richmond office and Virginia is out of our Charlotte office. So, let's go ahead and start with compliance. I know it's probably the least interesting aspect that you guys want to talk about today, but I think a lot of people start here and, after we talk about compliance, I want to talk about why people start here, but there's section 508. It'd be nice to know what that really means. I think people hear it all the time. They use it all the time. Also the web content, accessibility guidelines. What are these things and who – like all companies, all applications, all apps, websites – has to comply with these standards, which one, and to what degree.

Virginia:

Sure. So I actually, for whatever reason, really get into the laws behind accessibility. So, I don't think it's as boring, maybe as other people do, but it does fall under the bucket of if you're not going to care about accessibility for the right reasons, at least care about it for the “don't get your pants suit off of you” reasons. When it comes to how it's governed. So, a lot of people actually, I don't know that you mentioned this, but the ADA is the legislation that most people are familiar with. It's good that you didn't mention the ADA though, because technically it doesn't - that specific piece does not talk about the internet at all. However, it is though the more overarching umbrella legislation, which is why pretty much anyone could be sued for not being conformant to accessibility guidelines. 508 is the piece of legislation that makes it mandatory for the government entities or anyone receiving money from the federal government to comply.



Virginia:

And that is part of the rehabilitation act of 1979, which I won't get into, but was recently updated. When it first came out or when it first included web accessibility, it had 16 pretty prescriptive ways in which a company could be measured against whether or not they were meeting the criteria. And so it quickly, you know how technology changes so fast, it quickly became a bit obsolete. But about two years ago, they refreshed that, that part of the law 2.2 WCAG, which is that web content accessibility guidelines that you mentioned.

And well, what's really great about what we have though, is that it's pretty universally accepted, it's not U.S. specific. It's actually the preferred accessibility guidelines really globally. So, a lot of the legislation in the U.S. But also in Canada and Europe, et cetera, all point there as they are standard for what makes an experience accessible.

Vinnie:

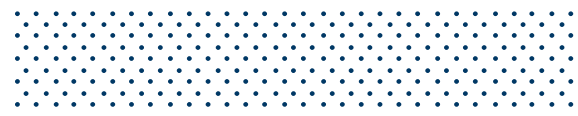
So, if I'm a company large or small and I'm trying to be compliant, I've heard people use the 508 compliance and non-government organizations all the time. And it's probably because it's everyone says it. S., they're just kind of parodying the phrase. But if I'm a company, non-government, should I be looking at 508 or just the web content accessibility guidelines?

Virginia:

So, 508 now points to the web content accessibility guidelines. The only difference is that when 508, when it was updated to point to WCAG at the time, the latest guidelines were 2.0. And about a year after 508 updated, then WCAG was updated to 2.1. And now they're even talking about 2.2 and 3.0 is on their horizon as well. So, the only difference would be, from CapTech's perspective, we would recommend our clients shoot for 2.1 AA conformance, right for WCAG. But legally 2.0 AA conformance is the required.

Vinnie:

And Caitlyn, who needs to pay attention to this? Is it some companies, companies of a certain size, or if anyone's putting a website out or an app out, they have to address this?



Caitlyn:

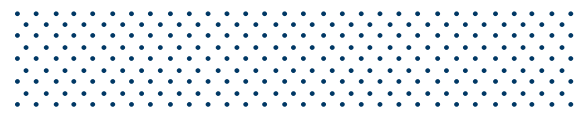
That's a great question. I think that, you know, accessibility is something that everyone should be paying attention to and incorporating into both the physical spaces and the digital spaces that they create. And I think that with the legal landscape, the way that it is, anybody at any scale is vulnerable to getting sued right now, just because of where the legal precedent stand too. Virginia mentioned the ADA, and there have been several lawsuits recently where the, because the internet is actually not declared a place of public accommodation. That's what leaves people vulnerable to being sued for the inaccessibility of their digital spaces. So, you know, with this being something that there is overall some risk to and also not really full parameters around who is actually required to build accessible websites, and applications are actually a part of that too, it's really, it's the right thing to do in terms of building digital products that everyone can access. But it's also the thing that mitigates risk for most businesses.

Vinnie:

It seems like a good catalyst to revisit some legacy sites and legacy apps companies may have and use this as a good reason, not to just insert accessibility into those solutions, but to rearchitect them and from the ground up consider accessibility. I want to get into this a bit, it's more than just making the site usable for people it's also a design approach. So, help me understand the difference between basically making a site just usable versus why this matters outside of compliance.

Virginia:

Sure. So, there are a couple of great reasons why we should care other than not wanting to be sued. As you mentioned, making sure that it is usable, it actually will increase your user base considerably. When we talk about like brand loyalty, for example, there aren't any specific studies that say that accessibility makes for a stronger brand loyalty perspective. Like there aren't a lot of studies that get into that, that I've been able to find. However, there is a really strong community within these different groups, especially those with sight vision impairments. And so, looking at brand loyalty in general, you can imagine that if there is a site that has a great experience versus one that has no experience, the word's gonna get out, and it can be a great differentiator from a, from a design specific perspective. I'll let Caitlyn talk a little bit more about this but, in general, I think one of the misconceptions around



accessibility is that it makes your site or make your design ugly. And that absolutely is not the case. That becomes a problem when you try to tack it on at the end, without considering it from the beginning, but really those constraints that may come with making sure that your experience is accessible can actually push you in innovative ways.

Caitlyn:

Yeah, that's absolutely right. You know, I think that one of the things that Virginia really loves to highlight every time we talk about this, especially when we do trainings, is really that curb cut effect when curb cuts were introduced – whenever it was that they were introduced – I'm not familiar on sidewalk, timing, but whenever the curb cuts were introduced, they've benefited more people than just those who are using wheelchairs to move around the world and move around their communities, people who are using strollers or riding bicycles, or who may have difficulty.

Vinnie:

But not skateboarders because there are signs that they can't use those, but everybody else.

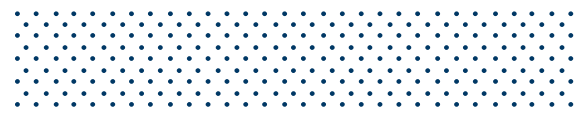
Caitlyn:

Okay. And I actually do think it's not a bicycle external out in, in some cases too. I definitely have broken that rule about scooters.

Vinnie:

Yeah. Scooters. Well, no, that's a good point. If you and I, I speak about this all the time, Virginia, that if you do design well whether it's architecture or project methodology or, in this case, accessibility, it pays unexpected dividends right there. The companies who empowered their teams over the last several years and put it in modern methodologies, they're weathering the COVID storm really well. They didn't do it for a pandemic. They didn't cut the curb for a scooter. They didn't foresee that, but the doing things the right way pays dividends that you couldn't have foreseen.

Caitlyn:



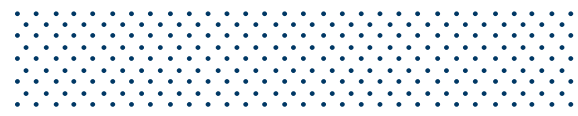
Absolutely. And I think that overall methodology of kind of inclusion in the design process is, is something that we are continually learning about, you know, as human-centered design practitioners and really making sure that we are delivering the best possible experiences for the actual people who are going to be using the products that we build. And I think one of the other interesting and exciting opportunities is, you know, as we've mentioned, there are the WCAG principles being updated at a pretty rapid clip. Now, especially when compared to how long it took for us to get from version one, to version two, given how quickly the actual devices that we're using are changing and given the evolution of the guidance around what it means to build an accessible experience, you know, to your point about legacy code or legacy environments, it really does behoove an organization to approach kind of, for lack of a better term, technical debt from an accessibility lens as well, because then they're able to not only meet today's technology standards, but meet today's design and accessibility standards, as well as when they're considering those refactor opportunities.

Vinnie:

Yeah. And one of the things that you guys touched on it early on, I think it's one of the sort of incorrect mental assumptions, is that this is going to make the site more basic. It's going to make it more difficult or take longer to develop because you're putting additional features in. Whereas really, like I said before about good design, if and this is going to get a little bit bit more technical, but when you develop software, whether it's a website or a mobile app, you want to disconnect the presentation from the actual content itself, right? When you couple those together it's coupling and decoupling, these are software terms when you couple those two things together you're locked in. So, I would argue that creating these apps and these, and these websites, decoupling content from presentation allows for accessibility. It also allows for internationalization supporting different languages. It also supports search engine optimization. So, we shouldn't be talking to clients about quote, adding in accessibility. We should be talking to them about proper software design that then allows for things like accessibility to be much more easily included.

Virginia:

Right? There's so many great things about what you were just saying there. And I think one of them is not confusing your markup with your presentation for so many reasons. And, and some of it is like you



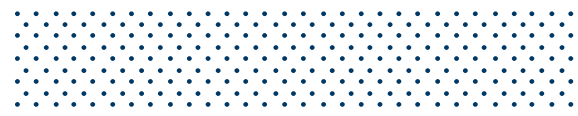
mentioned, some of the technical reasons, some of the other reasons when you're thinking about from a user's perspective, especially someone who has a specific vision impairment, you can't expect that your users are going to see your site the way that you intended, or the way that you originally designed. There are a lot of plugins out there. There are a lot of settings within the browsers that allow users to manipulate the way that a site is presented in a way that best fits their needs. And it gets really screwy. If you start combining the two and you don't think about the display versus the content.

Caitlyn:

I mean, I think that's such a good point. And you know, when we do the trainings or, you know, any kind of conversation we have about accessibility, the first thing that we speak to is really stating that style is not structure. And those two things should fundamentally be separated. You know, that's the reason why as a design practice, we do information architecture activities with just the labels and the names and the taxonomies. And then we scale that and enhance how we depict the experiences by increasing the fidelity, but only to wire frames still focused on the structure, still focused on the functionality, still focused on the content. You know, it's about that layered in iterative refinement so that the foundational elements are there to best support a solid user experience. Whereas sometimes relying on the design elements to really convey and support the experience can often hamstring the team from really being able to design the best possible and most usable experience for everyone who encounters their site.

Vinnie:

Yeah. that's really good. I, and I come back to the doing things right the first time. And I'm reminded of back when, you know, earlier web development, people would write websites specifically for Explorer or specifically for Chrome as opposed to writing it to the standard. And then as those things break on different platforms, you code to the exceptions, you're not coding to the platform so that as their products become more compliant, you're, you're just removing the exception code, you're being smart about it. So, if someone says to me, if we're at a client and they say, let's add accessibility, and they say, well, we didn't build the site that way we can't handle that. Or let's, let's implement internationalization. We didn't build it that way. Let's make sure our SEO is improved. Well, we didn't build it. If you do it, all of those things become more easily implemented, right? So, it really comes back to not cutting corners,



doing things right. The first time it doesn't take any longer. It just, you have to have the right people doing it. And then you get all these extra benefits and it's going to pay huge dividends. It's really important stuff.

Virginia:

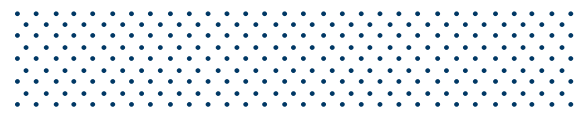
And I'd say specifically on the SEO aspect; I mean, if you think about it, search engines are blind, deaf. They can't use a mouse. So, by ensuring that your site is accessible, you're also increasing your SEO. And it's just as the back to the curb cut effect, right. It's the gift that keeps on giving. And the problems are really when you try to tack it on at the end and you really need to consider it from the very beginning.

Caitlyn:

Yeah. I mean, one of our favorite quotes from one of the early and deep kind of modern web practitioners Jeremy Keith said, "That you're far from being something that is added to an experience. Accessibility is something that we have to ensure isn't removed from it." To your point about getting that foundational level, doing it right the first time, I mean, that's really what it's about. It's about making the right decisions to continue to support the access. And so that anyone who accesses whatever you've built can access it in the way that they choose. And, you know, something that also is really important that we talk about. And I think Virginia mentioned this a little bit. We as designers sometimes have the illusion that we're the ones that are ultimately in control of the experience the end user has, and that couldn't be further from the truth. People can and will change everything about that site that we spent weeks painstakingly designing. And so, it's important to ensure that we give users the control that they're going to have by baking that kind of control and customization, whatever the word is, giving them the ability to really adjust the experience in a way that meets their needs.

Vinnie:

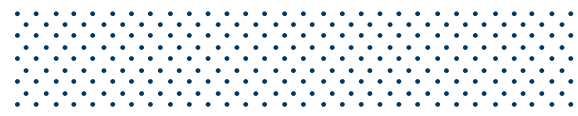
Yeah, it, it, you know, have a history in this spec portal and content management days, you know, the differences between personalization and customization, you know, the site knowing you and attributes about you and personalizing its response to you versus you having, or in addition, having the ability to configure and customize it to your wants and needs as well. So, they're both important. And that, and



this speaks to that. Let me challenge one thing when we said before that accessibility, that doesn't limit creativity. So, I'll play the bad guy in this example. And I'm thinking about a very highly functioning app, maybe for a financial institution or a travel company or something. And I want to implement augmented reality to have a really cool experience where I can see additional things within the venue that I'm visiting or I'm using perhaps more IoT technology, Bluetooth triangulation to route me somewhere. These are things that a visually impaired person really can't take advantage of, right? How are you going if you're near blind or blind, how are you going to benefit from let's say Augmented Reality. Do you just cut that functionality from the app for them and notify them that it's there? Or do you try to provide us a similar pathway for that information? I'm just thinking of things that will break down based on technology today and our ability to make everything accessible.

Caitlyn:

That's a great question. And I think that there are kind of several pieces that are a part of that, but one of the, one of the important things to remember, and one of the things we always drive back to is that kind of decisioning framework that the WCAG principles actually outline. We didn't really talk much about what those principles are, but it forms an acronym of pour, P.O.U.R. That experiences must be perceivable, operable, understandable, and robust. And part of the way that that's actually achieved on the web today is, for example, with alternative text on images, right, where someone who is not consuming the website with their eyes, they're instead consuming with their ears. We provide alternative texts that essentially describes the content of the image in order for them to be able to know exactly what's presented on the page. We don't really hide the image unless it doesn't add value to the experience, but we make sure that there are alternative presentations, so that information can be consumed in any way a user wants to consume it. And to that point, if we're considering new technologies or relatively recently globally accessible technologies through devices like cell phones, like Augmented Reality, I think it's important to think about what additional mechanisms are available to us to include with augmented reality that would provide an alternative way to experience the content. You know, one of the things that I think about frequently is incorporating haptic feedback or, you know, vibrations into the different experiences like wayfinding. For example, if you're using reality wayfinding, you can use haptics to help supplement that and still communicate the same kind of information to people just it's tactical versus visual. So, I think thinking about accessibility as a constraint and a



challenge to really allow yourself to explore new ways of presenting information and asking yourself, you know, is that original way that I was going to design this the best possible way for everyone? Is there a more usable, more useful, a more robust way for me to design this? I think using it as a challenge is often a really exciting way that I find for the, the teams that we're working with and the projects we're working on to really explore and push the boundaries with what technology can allow us to do today.

Virginia:

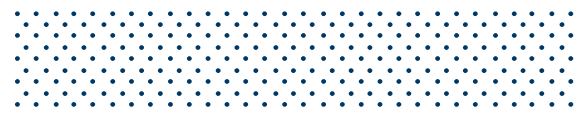
Caitlin brought up all text and I think that's a great example also of something that can benefit, not only someone who might have vision impairment, but also what about someone who has a really crappy connection. And so, they are not able to download the images. It can provide value there. And I think the same, the same could hold true for some of these more innovative and cutting-edge technologies that it's not just folks that may have certain disabilities that might be stopped from experiencing them in the way that maybe they were originally intended. But we need to think about all of the different users and how we can ensure that we're creating these experiences to allow people to participate.

Vinnie:

Right. Yeah. I mean, it reminds me of that old term, you know, graceful degradation and that were per or progressive enhancements, I think is the other direction. So, is that something that applies to the work that you guys do? Do you look at it from a progressive enhancements or graceful degradation standpoint, or are those terms outdated?

Caitlyn:

I mean, I certainly look at it from a progressive enhancement perspective. You know, I think the big reason for that is that there's a baseline level of access and a consumability that we want to ensure every user has with the work that we do. And yes, I think graceful degradation is applied, but it is an applicable term here, but I do prefer the framing of thinking about what's the minimum viable experience and how can we layer in enhancements that make it even more exciting or more captivating or more robust, but there is that baseline level of minimum functionality that everyone needs to have in order for a site to be useful to them. I mean, we're not building these products so that people can't



actually consume them. So, I think it's really important to set up the way that you think about how delivering on design from that perspective.

Vinnie:

I liked the way you phrased it on the progressive enhancement side – that the application must perform all the same, the same functions for everyone, the same basic functions for everybody. So, if it's again, a banking application, you can still transfer funds, you can make a deposit, you know, et cetera. But it may be more entertaining for someone who's normally sighted so that they can see Augmented Reality or those types of things, but the functions are still the same. So, what are some of the common issues? What do you guys see from a design standpoint, that's, you know, that you guys come across all the time as, you know, top five things that you guys see in, in, in bad design from, from an accessibility standpoint.

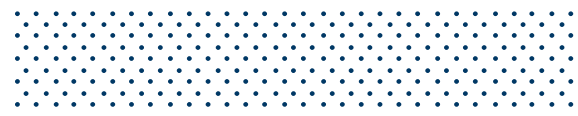
Virginia:

So, I'd say there, there's some really easy ones to detect from the design perspective that we see a lot. Color contrast is, is one that is a repeat offender. And one of the things about color contrast is that it's really, really easy to test for and make sure that you're meeting the appropriate contrast guidelines. But that's definitely one that we see a lot that there's looking at text, and then the background color behind it. If there's not enough contrast in, there are a number of different types of vision impairments or folks might not be able to distinguish the text from the background.

Vinnie:

Is that complicated by the fact that you're a designer and have a 4K monitor, and somebody else may have a seven or eight year old, you know... how do you... The colors are going to be different, on different monitors to begin with, but designers are going to use top of the line stuff that are color correct and color accurate, right? So how do you, what kind of variability is applied to that testing so that it's testing a range, I guess, is what I'm asking?

Caitlyn:



Well, the good news about the WCAG principles is that it actually specifies a contrast ratio that text color, and the background behind the text has to have. So, regardless of the color calibration of your monitor, or whether it's a beautiful 5k monitor or the CRT that you still have from 20 years ago, if you were color combination to meet that threshold, that threshold is intended to account for the varying device capabilities in rendering those color spaces.

Vinnie:

Yeah. Okay. So, I'm sorry, Virginia. I stopped you after number one. So, give it to me.

Virginia:

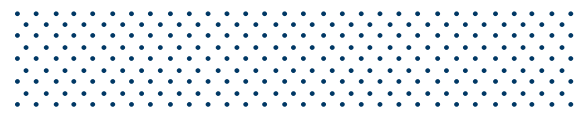
No, you're fine. So, color contrast is one and the theme of color using color and color alone to convey meaning is another issue that we run into. So that comes into play a lot with navigation where we'll see sites or apps where the color of the icon just changes. There's no other indicator to to indicate where no other indicator to indicate no other way to indicate how, where you actually are in the site, which can be really disorienting.

Vinnie:

That applies to internationalization. Also people using red in America as a warning; other countries red is not a warning. It has different meanings. So yeah, that's, again, there's so many, there's so many similarities between internationalization and accessibility. Keep going, number three.

Virginia:

In that same kind of vein as with the not using color and color alone is that we, we fight with designers on this sometimes, but underlining links. So, I'm not saying that you have to underline your links, but it is a wheel that's been pretty well established. So, like maybe we should not try to reinvent it, but I've played some of the same, you know, being able, a lot of the times you'll see a paragraph of text and then there's a link in the very middle. But again, if it's not underlined, if there's no way other than it's a slightly different shade of blue or something like that, it can be really hard to distinguish. Another thing that we see a lot is when people use the term click here and I'm doing air quotes, click here. Click where



exactly? So that's not great from a usability perspective. It certainly is not great from an accessibility perspective because where, where is here? Caitlin, I'm not sure if you want to. Right, right. Like where is he? Yeah.

Vinnie:

I was trying to understand why it was a problem until you said it that way. Right. It's right there.

Virginia:

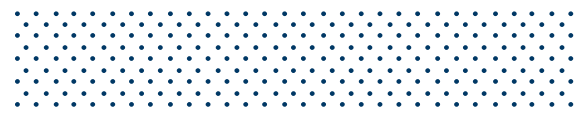
Right. It's a combination of where is here, but it's also why, you know, there's an opportunity there from a usability perspective. Again, this isn't even necessarily accessibility specific, but we should be explicit with our users about where, you know, setting their expectations. Whereas this link is going to take me here, click here. And then what, you know, it's, especially if you're thinking about like a blog post or something, click here to continue reading about X, Y, and Z, or, you know, set the stage for what the, what the user can expect next.

Caitlyn:

Yeah. It's absolutely about effectively managing expectations. You know, we want people to know what's going to happen when they click on something. And when the text just says, click here. Well, if I'm not looking at the site to consume it, I don't know where here is. And then there's nothing really of descriptive value. That's going to tell me what happens once I actually click on the thing. So, you know, to Virginia's point, there, there are benefits here beyond just the accessibility impact of it. It really does improve the overall user experience significantly.

Vinnie:

Great. I want to kind of have a final section here on where are we going, how are things improving in this space? You guys mentioned a couple of times that the standards went more than a decade or so before being updated. And now they're updating quickly. So that's, that's obviously a big deal. I think some of the technology is catching up computer vision and its ability to help is probably another big deal. But what are you guys looking forward to? What are you seeing in either, you know, physical



devices or in design that you guys are looking forward to over the next, you know, five or six years.

Virginia:

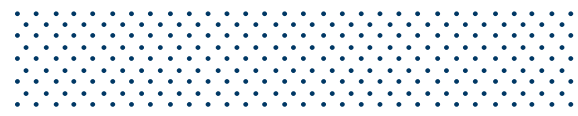
Design in particular? One thing I've been really excited about is just more awareness, and five years ago, you would never see anyone include accessibility as part of their portfolio or their resume. And now you're starting to see that. And so that's really exciting for me. Also Caitlyn mentioned earlier around inclusive design, and I think that goes beyond just design, certainly, but just some of the social issues that we've been talking about over the past, you know, forever, but especially in the past few months, making sure that we are including a diverse set of voices at the table and just seeing how that really pushes what we're capable of. And back to that whole innovation aspect. I think that the more inclusive and diverse we we make our design process to begin with the more it's going to help with accessibility as in, as one of the one of the benefits there.

Vinnie

Great. So, before we wrap up, I wanted to make sure we hit everything you guys wanted to cover. Is there anything that you guys wanted to talk about that I didn't ask about?

Caitlyn:

Yeah, there's, there's one other thing, you know, in, in the way that the design practice is evolving, one of the things that we're seeing is taking advantage of other technologies like voice or several other ways that that are mediums, that we can really design for them. One of the things that really excites me about that is really starting to think about all of the different contexts in which people are actually accessing and consuming the sites that we build. And one of the things that I really personally take to heart, because I'm about to be in this situation, is there's a wide spectrum of ability in that there are permanent impacts to your ability. There are temporary impacts to your ability. And then there are also situational impacts to your ability. For example, I'm about to have wrist surgery in a few weeks and I'm going to be down my dominant hand. So, I'm going to have limited mobility, limited fine motor control, and using my left hand on my phone, my nondominant hand. So, it's not just something that, we're doing for the kind of permanent population, so to speak. This is something that we're designing for our



future selves here, and we may be moving in and out of varying abilities over our lifetime. So, this is something that's really important to consider for stepping outside in the environment, being bright in there, being low contrast on your phone versus a low contrast monitor versus having cataracts. So, there's this wide spectrum of all kinds of contexts and situations that accessibility really helps us design for.

Vinnie:

Yeah. I could see you using a voice more than you used to when you're in a cast.

Caitlyn:

And I don't use voice at all because I can't stand it. It's just, I'm inefficient, but it's going to be an interesting six weeks.

Vinnie:

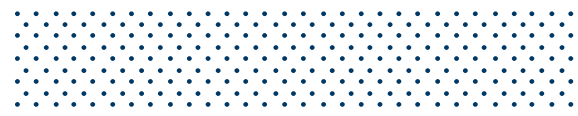
Virginia, do you have any closing thoughts for us?

Virginia:

Yeah, there's a, there's a quote that Caitlin and I bring up a lot that we really like a lot by Hubert Florin and he says, "Accessibility is not a constraint. It's a design philosophy that encourages you to make better choices for your users and helps you focus on what really matters." And I think that really gets to the heart of about why we're so passionate about accessibility is that it doesn't just help some users. It really helps all users. And it helps us also as designers really think outside of "what is the first solution," but really focus on what's the best solution.

Vinnie:

Yeah. Thank you for that. I came into this thinking about accessibility and, like I said before, much of the same way I do internationalization, it's something that you can get relatively affordably if you follow a good design practices. And it's just like, okay, let's go ahead and make sure we do this. Because it's part of doing things the right way. But what you guys have taught me through this is that it applies to many



more situations and many more people than what you would typically think from, from typically impaired or typically disabled from the temporary temporarily disabled two different use cases. And I think that those are the subtle differences that when you understand them and, and you, you're passionate about it separates a good site from, from an, from a truly exceptional site. So, I think it's really important to have that thought in the beginning. So, thank you guys for joining – really appreciate your time and your expertise. And for those listening, thank you for sticking with us. We're going to have another podcast out shortly.

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