**Broke with Accessible Taste: Understanding the Economics of Digital Access in US - Crystal Preston-Watson**

**Accessibility NYC Meetup - January 11 2022**

**CRYSTAL PRESTON-WATSON:** Good evening. Or late afternoon for -- I know there are some people who are joining from the West Coast. This is Broke with Accessible Taste. Understanding the economics of digital access. I am Crystal Preston-Watson.  I'm a senior digital accessibility analyst at SalesForce. If you want to contact me after this talk with any questions that might pop up, because I know I'm the type of person who will take in a talk and really enjoy it, and then after the fact, after all the questions are said and done, it's over, then have a question. So I am more than happy to answer questions after this. You can reach me via Twitter, at @ScopicEngineer, LinkedIn, and my website is crystalprestonwatson.com. I do use LinkedIn. I don't really enjoy LinkedIn. But if you decide to contact me there, I will get it. It just probably will be a lot more delayed than via Twitter or my website.


So before we get started, I just want to give you a few notes.

This presentation is a vast overview of disability economics. And actually, this talk is roughly 30 minutes -- I want to allow time for questions. It can't even touch the surface of all the interconnected issues and complexities surrounding these subjects.

Also, this particular presentation is focused on the United States, and in some cases, New York. But disability and accessibility are global issues, and I am planning on doing an updated version of this presentation that has a broader global focus.

So this talk kind of came about as I was thinking about shifting left, and, for those who may not be familiar with that, the principle of shifting left in software development is bringing tasks that are usually left to the end of the development cycle earlier. And this is done to mitigate risk and improve the quality of products and features before they reach the customer.

As someone who has a background in quality engineering, I am thrilled and celebrate to see this come into accessibility. As many of you know, accessibility is usually an afterthought, if it's given any thought at all, when it comes to technology and software and website development, by many places. Really, many of the major issues and the blockers that we constantly see would just not exist if accessibility was considered at the beginning.

But as I started to think more about this, the shift left of accessibility, what is the beginning, and what should be considered? There is kind of an unspoken assumption that I find many companies and organizations have, when it comes to accessibility and disabled customers, and that assumption -- one of those assumptions -- is that customers have equal access to technology and assistive tech to use in consumer products.

It's kind of like... bear with me, it's a weird analogy -- but it's like the old Star Trek TOS, the Original Series episodes. They transfer over transporter, and when they're beamed down to whatever planet of the week, that's only when the story starts.

For a lot of places, when a customer gets to their products, but has to go out of the way to identify that they are disabled and they need accessibility, settings and features -- that's when the accessibility begins. I've been in so many talks, rooms, presentations, meetings, and rarely does that initial access by disabled people -- is it discussed or mentioned.

In my opinion, a significant reason for this is that many people just don't understand the reality of disability outside of technology, their own company's products, particular disabilities, or their own personal income level, or the income level of their peers, or their quote-unquote "average" or "common" users. And the thing is -- is that if you don't have this understanding, you don't really understand.

Because the more comprehensive glimpse that you have, what it means to be disabled in the United States, in 2022, the 21st Century, you realize that shifting left means not just thinking about initial design or concept, but the journey that people have to endure before they even use or even know about your products or features, and, like everything in this country, the kind of experience that people have on that journey depends on money.

So, let's talk about money. The median annual household income for households that include any working age, and working age is like 21 to 64, though I think that's really nowadays -- it seems like it's 18 to like -- whenever. You know, honestly. Whatever age, upper limit age. I digress. I'm getting off on a tangent. But any working age people without a disability in the United States, in 2018, was $74,400.

The median annual income of households that included working age people with a disability in the United States is $46,900. If we want to focus down on New York State, the income of those without disabilities, the median annual household income, was $83,100. And with disabilities is $45,600. There is a vast divide between the incomes for those homes with and without disabled individuals.

Let's look at the numbers around disability and employment to see why that is. People with disabilities make up approximately 12% of the US working age population. However, they

account for more than half of those living in long-term poverty. 32% of working age people with disabilities in the US are employed, compared with 73% of those without disabilities. If we want to again, focus on New York, and New York City, 35% of working age people with disabilities in New York were employed, versus 74% of those without disabilities.

Those are some really, really high numbers of unemployment for people with disabilities. There are multiple factors for that. But the most significant is -- this became very clear in 2020 -- is the resistance from companies to hire disabled workers, and much of that resistance is usually providing accessible accommodations for workers and accessible environments.

But, as we saw, with the beginning of the pandemic, many of those accessible accommodations that were said to be impossible to provide for disabled workers -- accommodations like remote working -- were solved for millions of workers almost literally overnight.

And these were huge, huge, huge, huge companies, where the vast majority of their workforce were in offices, or on physical locations, went from that to remote work almost overnight -- honestly, in some cases, for a lot of people, overnight.

But, just because a disabled person finds work, a job or a company that's willing to provide accessible accommodations, it doesn't always mean that the work will be adequately compensated.

This is something that a lot of people don't really know about, and this is the slide that a lot of people were shocked, too, once I do explain it. The Fair Labor Standards Act, FLSA, is the act that establishes minimum wage, overtime pay, a lot of different things, recordkeeping, employer standards for employees, not just federal, state, and local governments, but also in the private sector. It's the act that states that the federal minimum wage is $7.25.

The federal minimum wage is $7.25, but if you kind of dig deeper into the Fair Labor Act, there's Section 14c, and Section 14c of that act does allow for some employers, who seek and get approval and certification, to pay less than federal minimum wage, quote, "if a worker who has disabilities for the job being performed whose earning or productive capacity is impaired by a physical or mental disability".

So, what this is saying is that, if employers ask the government, just like... Hey, we're going to hire people with disabilities, and we feel that their disabilities impedes the labor that we're hiring them to do -- can we pay them less than $7.25 an hour? And this act says, Sure you can. Go ahead.

Now, also, I should state... this Section 14c does go on to specify that it doesn't apply unless the disability actually does impair the worker's earnings or productive capacity for the work being performed, so it's not a blanket thing, like if you have a disability, we can pay you less than minimum wage.

But it's really, especially when we kind of see how places, companies, organizations, really start to view people with disabilities, it's one of these things that can be misused and has been misused. There's a lot of court cases and reports that have been done about it, because there's a misconception that people with disabilities are less productive, low skilled, and unskilled. This is just a misconception. It is a myth.

One of the jobs that kind of usually may fall into this Section 14c are grocery baggers that you see at grocery stores. They sometimes are contracted by new chains from different organizations that will hire people with disabilities, and they will pay them sub-minimum wage. And the thing is that a skill is a skill, work is work. I will be honest, you do not want me trying to bag your groceries, because you're going to get busted up eggs, because I do not know how to do that. I am someone who people will say, I am high skilled, and the thing is that, for me, there's a lot of things that my skill does not compare to someone else's, so it doesn't matter what disability or impairment that I have. A skill is a skill. Work is work.

I'm getting off on a tangent, but when I found out about this particular section, it really did just ignite a fiery anger in me, as you can kind of see, as I get kind of discombobulated as I speak.

The good thing is that there are some states that have started to eliminate the subminimum wages in their areas. Several states have passed bills to phase out the payment of subminimum wages under Section 14c. And those states include Alaska, Maine, Maryland, New Hampshire, Oregon, Washington, Hawaii, Colorado, California, and Delaware.

New York -- I actually tried to find out -- there is a bill, it's in the State Senate right now, it's been there since May 14th of last year, it hasn't really moved, and before that, before it even got before the Senate, it was in this weird kind of holding status. I don't know a whole lot about the state legislature in New York to say what that means, whether it will be passed or it will not. Just know that, if you are in New York, there is a bill that's currently before the state procurement and contracts committee, about eliminating subminimum wages in New York.

So, we're talking about disability and employment, and eliminating subminimum wages is really a good trend to see, but there are many people whose disabilities prevent them from working full-time, part-time, or even at all. For those people, that means they'll have to seek other benefits and other income, ways to provide for themselves. In the United States, that really does mean social security, Supplemental Social Income, SSI, and Social Security Disability, SSDI. A lot of people may have heard of these two, and I realize that, especially if you are disabled yourself, or you have family members, friends, loved ones that are disabled, you might have heard of the trials and tribulations they have to go through to get these benefits.

These benefits are really cash assistance. I didn't want to get too deep into SSI and SSDI. I could make a whole presentation, hours long, really digging into disability in the United States, and what it means to try to get benefits and live off of this. It is a very complicated issue, I'm not even barely making the scratch, I'm just kind of giving you information about

it. But it is worth going through and kind of just reading even the quick facts on the Social Security Administration's website about what really goes into these two programs.

A big overview is that SSI is for people with disabilities who are blind, who are older, they will get a payment from the government, the Social Security Administration, every month that will provide an income. SSDI is along the same lines, but you actually pay into that particular program, as a worker, you pay credits. I'm not gonna spend too much into this, because there's a lot around these two programs, but when we talk about SSI, to be eligible for SSI in the United States, you either have to be age 65 or older, you have to be considered either blind or disabled, and you have to have limited income, limited resources. If you're a US citizen or a national, depending on what your status is, that makes a huge difference, and also, if you're a resident of the 50 states, or also some outlying territories, there are also many territories of the US where citizens are considered nationalized citizens, but they're not available for SSI.

There's a lot more that gets into it. I'm not gonna read all of this, because, again, this is something that we're not here for me to give you a super detailed guide into SSI and SSDI, but I do want you to understand a lot of what goes into -- when someone is told that: Hey, if you have a disability, you can just go on SSI or SSDI, it's quick, this is cut and dried. There's a lot that goes into it.

Let's just go over to SSDI, not as many points into becoming eligible. The main thing is that, with SSDI, you're not eligible for it if you haven't had an employment that has gained you credits into this.

The last point in this slide is that generally the person will have accumulated 20 Social Security credits in the last ten years, prior to the onset of disability, normally four credits per full or partial year. One additional credit is required for every year by which the worker's age exceeds 42. So, that's kind of the difference between SSI and SSDI, because I think sometimes they're confusedas the same thing. They are different programs.

This is seen as an easy thing to get. There is a huge misconception that these programs are -- if you don't want to work, you can just get these benefits. I did omit a slide, actually several slides, that went into the process and the years that it can take. It really can be years to get these benefits. And you don't get these. You might be able, if you are awarded these benefits, get payment retroactively but, until there is a decision made, you don't get anything. So. if you're disabled and you have to live, but you're waiting for these benefits, there's not a lot you can do.

Stories that come, being someone who has had many people in their life who have to go through the process of getting these benefits, without having a lawyer, going through yourself with these benefits, filling out all this paperwork, it's a very, very difficult process to do on your own, especially dealing with your disability and other just factors in life.

But, say, you do get benefit, you're awarded it? There is a cap. They don't just start throwing money at you, and be like, every one of your required needs are taken care of. There is a set level of income that you get. For SSI, for Supplemental Security Income, it's $794 for an individual, and around $1100 for a couple who are filing for SSI jointly. For SSDI, the average monthly benefit is around $1200. Actually, I did see that it was increased for 2022. I couldn't verify it before I jumped on to this presentation, but that increased around $75 to $100 for an individual.

Also, if you do take on SSI, you can only have a certain amount of financial resources available to you, and there is a lot of caveats to this, especially when it comes to if you are also working while you're getting SSI or SSDI. Certain costs that maybe are due to work or employment will come into play. But also the more you work, the more your income is reduced through SSI. So at the end of the day, depending on how much you're making, it's a very fine balancing act.

When we look at resources, around $2,000, if you have more than that in savings accounts, other sorts of assets, that's when the Social Security Administration starts to take a look and starts to see... Well, okay. What does that mean? And it really can affect how much benefits you get, and it's $3,000 for a couple who is filing jointly. For SSDI, there is no resource limit, because of the way that program is set up.

Now, you might look at this, especially when it comes to that number, $3,000 for a couple, and think that's really low, someone who is married, or in a legal union, that's not a lot, and especially not a lot when you're a couple that both are dealing with a disability. You don't even have to have tons of expenses. You can have one hospital bill, and one health care bill, and it's a lot. It just takes one, really.

This is something you might have heard people talk about. If you are someone who has a disability, and if you are a couple and you're both applying for Social Security benefits, you are going to receive up to 25% less than if you are living together but not married. When people say there is a marriage tax on disabled people, this is what they mean. It's pretty much saying, if you're both disabled and you're living together, that means we're just going to give you less. Even if only one of you is getting benefits, it says, okay, well you're married, that other person makes enough that their income will cover you, and that's really not it.

That's why it's saying to a lot of people that it really dictates their intimate relationships. If you want to get married, but you have a disability, you may not be able to do that, because you can't. You might not be able to support yourself and your partner.

Now, we've talked about employment, we've talked about benefits. Let's just say a disabled person has either attained a job that will allow them some disposable income, or they've found a way to make their benefits work, so they can have some semblance of a consistent income, there's still a lot more to be overcome. This is really where we start to get into a lot of a huger issue. That bigger issue is the digital divide.

The digital divide, when you hear it, it's mostly in connection with access to Internet and broadband, and it's something that is a huge concern. A lot of times there's an assumption, when it comes to especially tech companies and organizations, that everyone has this, everyone has the Internet, everyone's online, and everyone's online in the same way. But that's really just not the case.

According to Broadband Now, an advocacy group that's concerned about broadband access in the United States, 42 million Americans do not have broadband access. This is including DSL, fiber, cable, and wireless. The FCC has, according to Broadband Now, underreported the access to broadband, so, for the FCC, they're saying only around 14 million people don't have access. Part of the way they came out to only 14 is that, if one particular household had access to some kind of Internet, that was considered access to everyone that was nearby, which is really not the same.

Internet access and broadband access is a huge issue if you're in digital accessibility. If you don't have access to the internet, then you really don't have access to any technology. Also, when it comes to the digital divide, when it comes to broadband, there's usually the case where it's mainly about rural versus urban, and it is true people in rural areas do have less access to broadband. but there's also a huge issue with the lack of broadband access, internet access, in urban places as well. It's not just a rural versus urban issue, it's really a widespread issue. As I said, it can be not just be one geographical area versus none, but block by block, and even neighborhood by neighborhood.

Let's take a look at New York. I actually found a report that's talking about broadband in New York State, and this table has it broken down by New York State regions. You have North County, that has around 162,000 households and households without broadband access is 31,387, the share of households without broadband access is 19.3%. Mohawk Valley, 194,000 households, and 35,000 households without broadband access. 18.2%.

But the thing is, what the report by the New York State Comptroller found is that almost half of the households without broadband access are in New York City, and they go on to say that while the FCC reported only 0.4% of New York City residents, or approximately 31,000 don't have broadband available, they found more than 513,800 households without access. Outside of New York City, most places in New York State are considered rural, and there is an issue with lack of access to the broadband, but actually New York City accounts for almost half of the people in New York State that don't have access to broadband.

So if you are a disabled individual, it really doesn't matter if you live in upper New York State or in New York City, yyou will probably have issues beginning access to reliable internet, depending on where you are.

Knowing this, let's say, okay, you get access to somewhat reliable internet. Cool. And maybe you've gained access to a computer, and now you want to acquire some assistive technology. Acquire? What does that really mean, and how much is that going to cost you?

This slide is called screen reader price comparison. It's a comparison for me. On the slide, I have JAWS, VoiceOver, and NVDA. All three of these are screen reader software. For me, I don't qualify for any sort of program that would make JAWS free or reduced. That means either I would have to pay a subscription of $95 a year, or $1,000 outright for perpetual. It also includes a quotation in parentheses, there's $1500. That $1500 is the price of the PC I would use JAWS for. VoiceOver, which is Mac -- I should say JAWS is Windows only. and the $1500 is a PC that runs Windows.

VoiceOver -- while it's free technically because it's built into MacOS, the price of a Mac, depending on if it's used or new, can vary. I looked at a 2017 refurbishment, that was around $900. In these parentheses, you see $2,099, that is what my Mac that I'm using right now cost. I just bought that last year, it's a 2019 model. So, while VoiceOver is technically free, the cost is anywhere from between $900 to a great deal more, depending on the newer 2021 -- I don't know if the 2022 versions of Macbook Pro has come out.

And then you have NVDA. NVDA is also a Windows-only screen reader. I don't know if it's Open Source, but it is free. They do acceptt donations. In parentheses, I have $1500 because, again, that's the price of my PC. I do have NVDA on my PC, and that's what I use. I actually don't use JAWS. I do have JAWS on a work computer, but in my everyday computing gaming and stuff like that, when I'm on my PC, I use NVDA.

Again, there are assumptions that assistive technology is something that is just given to people with disabilities, and that really is not true. One thing assumed is that, Well, your

insurance will pay for it. Let's talk about insurance when it comes to assistive technology. It is not something that is guaranteed.

There's also a lot of, Well, if you're a student, due to section 504 and accommodations with schools. That is depending, there's a lot to that. It's not just like... Oh, you've said you're a student with disabilities, now we'll give you assistive technology. It's not just cut and dried like that.

So there are many different ways, and this slide is ten ways. It's a slide that I found from Western University, Andrew Leibs. Ten ways that someone could go about getting assistive technology purchases. There are mandated programs, government programs, regional disability organizations, national education programs, and disability foundations and non-profits, employers, assistive technology loan programs, manufacturer purchase and lease programs, fraternal organizations, and loaners, and buying used.

Very few of these are guaranteed to provide someone with disabilities, assistive technology for free, or really can do a lot at all, there's still a cost connected to it. Depending what type of assistive technology is needed, it could be a great deal of cost.

I'm fortunate that I have a job that allows me to not really think about what it comes to, but even with JAWS, though I could put that money into that, and get that, $95 for a yearfor a subscription, or $1,000 outright, I haven't done that. And it's still... Now I can afford it, it's still not a light purchase. For someone depending on what they do, what type of job and their income, it is something that's insurmountable for them, potentially. And one thing I would like to...

When we talk about assistive technology, one of the most used assistive technology devices is mouth and head sticks, and that's because of their low cost. This is something that really doesn't come in those conversations of, Well, we're gonna support assistive technology. There's the consideration of: Oh, we're going to support assistive technology in the form of software, or actual hardware devices, but what happens when, due to the type of disability

someone has, and also the money, the income that they have, Well, couldn't they use an eye tracking and things like that? Well, they may not be able to afford that, because it's not gonna be provided by insurance,it's not gonna be provided to them through a program. It may take a while for them to get it, and it may not appear at all.

Rounding out this, say someone has the computer, they have the assistive technology, so they're all set? Just a few things I want you to think about. That doesn't mean they're going to get access. This is because of something that's really big in companies that are focused on US markets, the Windows versus Mac versus Chrome, and what is being supported. When you're talking about desktops, you do get a focus when it comes to support, it's usually not super unequal when it comes to supporting maybe Windows versus Mac.

But, when we get outside of the United States, and what's the leading actual operating systems, it's a really surprising thing. When you talk about Q4 of 2020, Windows had around 76.7% of the world's marketing share, MacOS was 7.7%, and new, especially with the pandemic and with the support of schools, is ChromeOS actually shipped out, at the end of 2020, 14% of devices that use Chrome.

When it comes to iOS and Android, in the United States, iOS is something that's really, really supported, and Android is, by a lot of places, we'll do it after the fact, it's not an MVP. It strikes me as really shocking, especially because when it's like, Well we're global, and we have a global reach. But, if you really only put your focus into iOS, design for iOS, support only having iOS apps, you're really ignoring the rest of the world, because market share Q3 2021, when it came to shipping out devices, iOS was only 16.2%, Android made the vast majority of that with 83.8%.

If you are someone that can't afford iPhone prices, maybe you have family in a different country, where you talk a lot, you decided to get an Android. If your focus, when it comes to accessibility, is on Apple or iOS devices, which is something I definitely have seen, you're excluding a good number of people.

So this assumption -- it's an assumption, and it's a falsehood -- that there is equal access to technology and assistive devices, the journey to this is very different. It's vastly different, and is something that needs to be considered, because if you're really going to provide accessibility to your customers and your users, you really do need to understand how they get to your products. To your site, your application, and really understand that not everyone's coming up with the latest devices, the latest updated assistive technology that is available, or the costliest.

I'm gonna stop there right now. Because that's a good place to stop. So here we are. I am so sorry that took so much time. I said I was gonna end up in 30 minutes, and I talked so much. (laughing)

**THOMAS LOGAN:** This is amazing. Thank you so much, Crystal. I think definitely listening to your presentation, especially in the SSI section, I feel like it's come up tangentially many times at our meetup in person, we've definitely never had this kind of comprehensive presentation about this topic.

I'm gonna dive right into the first question for you, Crystal. We had a question on the statistics from Katriel. Is there any disabilities using the SSDI definition? Who is doing the disability measurement? Is it using the ADA for measuring the statistics of people that have access to SSDI?

**CRYSTAL PRESTON-WATSON:** I'm not going to even try to pretend I have a definite answer to that, but it seems to me a lot of times with SSDI -- again, please fact check me -- that seems to be more aligned with workers and people who become disabled, who have usually had jobs and things like that. There are particular guidelines. You usually do have to go to a doctor to get that documented and given to the Social Security Administration. You can't just go to them and say I am disabled, they want that evidence. Even with that, even if you're, say, someone who does have a documented disability, it can also depend on, and I know this sounds kind of crass, Well, how serious is the disability? There's a lot of things that come into play, and those definitions, I don't have it off the top of my head. There's a lot of digging into... Again, that's its own talk.

**THOMAS LOGAN:** Great, yes. Agree. There's several questions related to FLSA. Are the filings and approvals for the certificates publicly available?

**CRYSTAL PRESTON-WATSON:** I do not know if they are publicly available. That is a good question. That's something I can go ahead and look at, I don't know it off hand. A lot of organizations that talk about getting disabled workers into employment, a lot of times they work with companies, and usually the companies they work with do have those types of credentials and exemptions when it comes to section 14c, FSLA. So many acronyms.

**THOMAS LOGAN:** Word jumble. Also related to FLSA, this is related to getting the application approved, how do they gauge that? Is it based on productivity? Is it arbitrary? Any information on which ones get approved or not approved.

**CRYSTAL PRESTON-WATSON:** Again, I don't have that offhand. It's one of those processes that I don't know. You're starting to get states that are saying, We're eliminating this, it seems like it is something that gets misused in how that is assessed. Though I love digging into data, it would take on a full job finding a lot of stuff out.

**THOMAS LOGAN:** Yes, and I definitely want to say that I appreciate the attention to the New York bill. That's something that we've always been interested in, the New York City Meetup, to educate people about that. So finding out that that bill is actually still in the discussion phase, that's something that it's great for us to knowm, and, as you said, there's, I'm sure, tons of details just on that specific bill itself, let alone the different states that have successfully gotten rid of these things, but it's very helpful to learn about that today.

The next question was related to the numbers they put in for SSDI and how they come up with those numbers and the legislation-- they were put in place many years ago, versus now -- and how they update it.

**CRYSTAL PRESTON-WATSON:** Trying to find updated information on this stuff is... It's not the easiest thing to do, especially when it comes to applying for benefits and things like that, just even finding out what you were eligible for, it really takes a lot of digging. A lot of people are doing this on their own, having to navigate this and, really, a lot of people do suggest, who have gone through it, to have legal representation.

That takes money, but it does lessen the initial pain points and the time spent doing this, but that's how complicated this thing is, and a lot of people do this on their own. That means a lot of people do get denied, and then have to go through this again. A lot of denial is because they fill things out wrong, or they might have read a particular eligibility point wrong. It takes a lot having to do and find out this information, and as you can see, as I struggle with answering these well, because a lot of this stuff is buried deeper than just going to a site and just clicking a few links.

**THOMAS LOGAN:** Yep. I've definitely heard from people that I know personally and people at the meetup. There's always this fear of -- it is so difficult to make sure you get approved. That if you did start getting successful, improving salaries, things you get out of access to the service, you have the concern that... Well, if I need it again, am I gonna be able to get the program or assistance again, because it was so difficult to get set up in the first place. I've definitely heard that from some of the people who have come here.

The last question we'll take is from Charlotte on the broadband statistics you shared, and wanted confirmation, if you know, if this took into account access to a smartphone, the 42 million who don't have it.

**CRYSTAL PRESTON-WATSON:** Yes, I believe so. And I'm going to put that link up on my Twitter page.  I will link to that Broadband Now report, and their findings and how they came up with those numbers. It didn't just take into consideration of just DSL and stuff, it did take into all aspects of internet access as well.

**THOMAS LOGAN:** Okay. Great. Thank you so much, Crystal. Again, we want to thank you. There are tons of things in the chat saying thank you. Everyone really learned a lot from the presentation.  We want to again thank our sponsors Adobe, Equal Entry, Fable, and Google for helping us provide this event. Thank you to Joly MacFie from the Internet Society, and thank you to Mirabai Knight, StenoKnight, for the captioning today. We really appreciate having you all, and we hope to see you at another event. Have a great day or afternoon. Thank you.