

**SOFIA LEIVA:** Thanks, everyone, for joining the webinar entitled, "Toolkit for live captioning online video." My name is Sofia Leiva, and I'll be presenting today. Today, we're going to cover, what are live captions, best practices for streaming with live captions, what do you do after your webinar event has happened with your live captions, why should you caption, who is 3Play Media and our solution to live captioning, and lastly, end with a Q&A.

So what are live captions? Live captioning is much different than closed-captioning, which, closed-captioning is used for a pre-recorded video. Live captioning is for events happening in real time-- for example, this webinar, or a meeting like some of you mentioned, fitness classes, and even in conferences.

Live captions ensure that all your live events are accessible to deaf or hard-of-hearing individuals as well as make your content more engaging. Live captions are usually created by an automatic software or by a stenographer. In this webinar, we're using automatic captions.

With live captions, there might be a slight delay. This is due to either the computer processing, or the stenographer's typing. This is perfectly normal, and those delays will be somewhere between 4 seconds long to 40 seconds long, depending on the platform that you're using and the forum where you're live streaming.

Some important terms to know when talking about live caption-- one, you'll hear CART a lot, which stands for Computer-Assisted Real-Time Translation. And this is a service for live captioning that involves humans or stenographers, and this is typically done remotely. ASR, which stands for Automatic Speech Recognition, is a live automatic captioning solution that is done by a computer, like the one being done here. And this one, when compared to a CART solution, tends to have a couple more errors because it is a computer.

So let's talk about quality. For closed-captioning for pre-recorded video, you'll often hear about the 99% accuracy rate. But since live captioning is happening in real time, the accuracy rate can be lower.

There are many factors that can affect the accuracy rate of your captions. For example, live captioning is verbatim, so the ums and uhs, can get in the way of the words being translated. And many words are also homophones, which are words that sound like other words. And this will result in some misrepresentation in the live captions.

Live captioning accuracy can range from 80% to over 90% if you are using humans. It truly depends on the external environment, like the background noise, for example. Also, accuracy changes depending on whether you're involving human transcriptionists or solely using an ASR technology or an automatic technology. Typically, humans tend to be more accurate, but will miss more words, whereas ASR will be less accurate but not miss any words.

Live automatic captions with ASR will also not have speaker identifications or include non-speech elements. Like closed captions, live captions are typically placed in the lower center of the screen. And there are no governing bodies for live captioning, but certain states will have standards in place for quality of live captioning in instances like live court reports.

So best practices for live captioning-- these are going to be helpful whether you're using an automatic software or whether you're using a human live captioning solution. Number one is you want to have a strong network connection. That way you're not going in and out, and it interrupts the captions or interrupts the connection within your software for live captioning and within the software that you're using to stream.

Next, you want to make sure you have good-quality audio. We recommend investing in a microphone instead of relying on your computer or phone mic. A computer or phone mic can often pick up the surrounding sounds, and it can sound very distant or echoey. A good microphone will cost you around \$50. For example, we use one that's used for podcasting, so it gets an all-around sound, really focuses on the single speaker.

Next, your surrounding sounds-- so like I said, this is going to be really important for the quality of your live captions. In particular, with automatic live captioning, you have to be careful of your surroundings. A computer is not as smart as a human to detect what is just background noise, so making sure you have little to no background noise is imperative. You can hang blankets around your room to help dampen the sound, and we also recommend you avoid echoey rooms.

Next, you want to have a single speaker at a time especially if you're using an automatic solution where it doesn't detect who is speaking. This can get very confusing for your viewers, and also, multiple speakers speaking at once will distort the quality of the captions. And lastly, you want to make sure that you're just speaking clearly and you're enunciating clearly as well.

So how do you add live captions to live events? Most meeting, and streaming, and webinar

platforms allow you to add external captioning to events. Here's an example of some of them. So on the screen we have Brightcove, Facebook, YouTube, JW Player, Zoom. You also see Live in Instagram, Snapchat, but those solutions don't really allow captioning. These ones do.

So what do you do if your platform doesn't support live captioning? Well, one workaround is to provide a URL, and this will link to an external page. It's not going to be as seamless of an experience as, right now, you can see I'm presenting, and the captions are appearing on the screen. But it will still be accessible and allow the community to access those captions and know what you're talking about.

So what should you do post-event? From our tests and research, live automatic captions range from 80% to 85%, and it can be higher if you use human stenographers. The industry standard for post-production captioning or closed-captioning is a 99% accuracy rate. And if you want to provide a truly accessible solution, you want to make sure that you edit the transcript and add speaker ID and the non-speech elements.

In our State of live captioning report, which you can find on our website, we analyzed ASR software from various providers, such as IBM Watson, Google, and Amazon. And we uncovered that, while ASR accuracy rates are improving across the board, it's still not a sufficient solution to rely on in post-production captioning.

The report has helped us conclude that humans are crucial for providing accurate captions, which is why, when you download your transcript after a live broadcast, you should take the necessary steps to correct it if you're going to publish the recording. And so either you can take that transcript from your live webinar meeting and edit it yourself when you upload the recording, or you can use a third-party solution by uploading your video.

So why should you caption? The number one reason you should caption is for accessibility. There are many reasons why you should caption, but accessibility opens up to people who normally don't have access to live streams, because they aren't captioned.

In America, there are 48 million Americans with hearing loss, which is about 20% of the population and 360 million deaf and hard-of-hearing individuals around the World, and captions will help make your content accessible to them. 41% of videos are incomprehensible without sound, so captions also really helped to make them engaging, going beyond the accessibility aspect.

Now, you may be wondering, are people even watching videos with the sound off? Well, Facebook uncovered that 85% of Facebook videos are watched with the sound off. So if your live video relies heavily on sound, a lot of people are probably scrolling past it or not watching your webinars, not watching your meetings.

Also, especially if you're working in an education space and you have really complicated terminology, the live captions will help to clarify that. Captions also help improve your SEO, the user experience, and your branding. And also, in a study by Facebook, they found that captions increase your organic traffic. In addition, captions help improve the brand recall, verbal memory, and behavioral intent, and this was from a study by the *Journal of the Academy of Marketing Science*.

And in the education space, captions also help benefit students. So in a nationwide study conducted by Oregon State University, we surveyed to see how students were using captions and why. And the result proved that captions truly are helpful in learning. 98.6% of students say they find captions helpful. 65% say it helps them focus. And 75% say they use captions as a learning aid.

Now let's dive into the accessibility aspects. So there are several laws in the United States that talk about captioning, either for prerecorded video or for live video. The first one is the Rehabilitation Act of 1973, and the two sections that impact video specifically are Section 504 and Section 508. Excuse the typo.

So 504 is a broad anti-discrimination law that requires equal access for individuals with disabilities, and this applies to federal and federally funded programs. And Section 508 requires federal communication and information technology to be made accessible, and it also references something called the Web Content Accessibility Guidelines, also called WCAG. And we'll dive into this in a little bit, but this one does require captioning and audio description for videos.

The Americans with Disabilities Act is a major US law, and it has two sections that impact video, Title II, which applies to public entities, and Title III, which applies to places of public accommodation. This includes private organizations that provide a public accommodation, so like a doctor's office or a library and, in the context of a place of public accommodation, has been tried in many lawsuits in regards to how it impacts internet-only businesses.

And in several cases, Title III has been extended to the online space. Mainly, a lot of

organizations are getting sued for not captioning their recorded video, and so many are taking the step to start to caption. The other standard, which I mentioned a little bit earlier, is the WCAG, and the one to know is WCAG 2.0. It's a version of the Web Content Accessibility Guidelines.

And essentially, these are just best practices for online content and digital content. The thing with WCAG is there's three levels, and each one gets progressively more accessible. So level A is going to be the easiest to maintain. Level AA is what most people are aiming for, and this is the mid-level of standards. And level AAA is the most comprehensive and the highest accessibility standard.

Most law and lawsuits mention WCAG 2.0 for compliance. And for now, that is what's legally required. Only if the law explicitly states that web developers have to adopt to the newest WCAG version, you do not need to make your content WCAG 2.0 compliant.

So WCAG has several versions that have come out, and WCAG 2.0 was the newest release this year. But a lot of laws and lawsuits still mention WCAG 2.0. To be compliant with WCAG, you're required to caption pre-recorded video for level A compliance and caption live video for level AA compliance. And just as a note, WCAG does not specifically specify quality or accuracy requirements.

So quickly before the Q&A, we'll dive into, who is 3Play Media? So we're a video accessibility company, and we're located in Boston. We spun out of MIT in 2007. We offer a range of video accessibility solutions, such as closed-captioning, subtitles, translation, audio description, and recently released our live automatic captioning solution.

We work with over 2,500 customers spanning from higher education, media, government, fitness. And really, our goal is just to make captioning and video accessibility a much easier process. We offer a number of turnaround options and workflow options to choose from to help make your workflow a lot easier. We have an easy-to-use online account system. We offer multiple turnaround options, from a couple of hours to over a week.

We have different video search plugins and integrations for captioning. We have the 3Play Plugin, which allows you to publish captions on videos where you can't publish or publish audio descriptions. And really, what we're working for is just to be a one-stop shop for video accessibility.

A little bit about our live captioning solution. It's a live automatic captioning solution, and it allows you to schedule automatic captions for live streaming events. This solution utilizes our automatic speech recognition technology and can be implemented through an iframe or a JavaScript embed or natively within video players.

To note, the solution, like I said, is automatic speech recognition. So we've found that the accuracy can be around 80% to 85%. And this means that it's going to have, in a seven-word sentence, there'll be one error. We do support API endpoints for ordering and managing 3Play live events. And all of the settings for live events are parameters you can set through the API. You can also download the final transcript or order additional services on that transcript.

And these are some of the platforms that we're currently integrating with. Facebook is coming soon. Now, we do have a promotion going on right now that you can get your first 10 hours of live captioning free. And if you're a 3Play customer, you can simply just turn on the module and start scheduling your live captions. In order to benefit from this, even if you have an event that's going to be three months from now, we suggest that you schedule the live captioning now so that you can take benefit of this promotion.

If you have any questions about demoing, have any feedback or questions about our live caption, you can email [livecaptioning@3playmedia.com](mailto:livecaptioning@3playmedia.com). Now, that's all I had for today, and I'd love to start getting into the Q&A. If you have questions, please make sure to type them in the Q&A window or in the chat window, and we'll compile them on our end.

So the first question we have is, does 3Play integrate with WebEx? So currently, we do not, but that's certainly something that I can pass on to our team to work on and see the requirements for that. Next, we have, how does the live captioning process work?

So first, you would create a live event in your live stream video platform. And then you would hop on to 3Play and schedule your live automatic captioning there for your event. Next, you will stream your event, and your captions will display directly in the video player and through an embed code. Finally, you can download edit, or upgrade your live transcript, and you can access the final transcript for editing, upgrade to full transcription, or even order more services on the transcript from 3Play.

The next question we have is, what's the main difference between 3Play's live captioning solution and others on the market? So ours really allows you to integrate with a plethora of live-streaming services. It also makes it easy for you to upgrade your transcript after so that, if

you want to post your video and have accurate captions on it, you can easily do that through our account system.

We also use one of the best ASR technologies called Speechmatics. And it can be implemented through an iframe, or a JavaScript, or natively within the video players. And we are actively working to improve this solution by improving the accuracy, and improving the way that we do it, integrating with more services, things like that.

So someone is asking, can I access the final live transcript if we use captioning through 3Play? And yes, you can. Once your events end, you'll have access to the final transcript with options for editing, upgrading to full transcript, or even ordering more services on the transcript. And additional services may include 99% accuracy transcription, vertical caption placement, caption encoding, audio description. There's a range of things you can order.

Someone's asking, do you offer the captions as a link right now that we could put into the chat for participants attending via WebEx? Great question. Yes, we do. So that's another option. If your player doesn't support live captions, you can share a URL through there so that your users can use that.

Someone is asking, does your live captioning service integrate with any video platforms? Like I mentioned, it integrates with YouTube, Zoom, Brightcove, and JW Player right now. And Facebook is coming soon, but the URL is another option.

Someone's asking, I saw on your website that live captioning is currently in beta. Will this have an effect on the live captions? And no, it shouldn't have an effect on it. We're just looking to get any or all of your feedback on the usability, the features, integrations, and more. And we want to make sure that we're building a solution that fits your needs and expectations for live events.

Cool. Well, like I said, if you have any questions or you have any comments or feedback, you want to take advantage of the promotion, I [? encourage ?] you to contact us at [live@3playmedia.com](mailto:live@3playmedia.com). And there you can get information on pricing.

You can see how you can get started. If you're a customer, you can see how you can upgrade. And those are all the questions I have for now. I hope everyone has a wonderful rest of their day.

