IAN: Yeah, as you heard my name's Ian. I'm an accessibility specialist. My background was initially in design and uex across web, print and games. And now game accessibility is all I do. It's been an exciting field to work in, especially the last few years. It's been picking up steam enormously, especially in the last year. So, I've done a few of these news update talks over the years. I just keep a note on Google Keep of the news that happens over the year. A couple of days ago I hit the character limit. Didn't know that it had a character limit! As only November. The amount of stuff happening this year is really exciting. That's what I'm going to talk to you about, some of the cool things that's happened over the past year. So, there's been far too much for me to be able to cover everything. So, I'm going to cover a few key things, few common patterns in the past year. Hardware, middleware, information, events, games, and everyone's favourite ‑ legislation.

(Laughter)

So, starting with hardware. The big news that most people are aware of is the Xbox adaptive controller. That came out over a year ago. I'm only talking about stuff from the past year, so that's old news. What I'm talking about is what happened next, which has been other mainstream gaming technology companies, companies that haven't had any kind of background or experience in accessibility and now are moving into the assistive technology marketplace, which is really exciting to see. First off this from Thrust Master, this wasn't designed for accessibility, this is a highly configurable controller. You can basically rearrange it to suit your personal needs. Although this is not specifically designed for accessibility, it has lots of nice accessibility potential. Next up, this came out of left field for me, IKEA. I didn't know, but IKEA have a strong background in accessibility. It's primarily through furniture, but now they're moving into the assistive tech space and specifically into gaming. This is an ergonomic wrist brace and key toppers. These are the first couple of products. They're doing more in the future. Their angle is 3D printer. Like with the 3D printed wrist brace, they're going to move into making peripherals and accessories tailored to each individual person's needs. Onto the big one. This is the exciting one for me. This is breaking news, this was only announced a couple of days ago. This is a company called Logitech, who make gaming accessories, controllers, head sets, that kind of stuff. You're looking at a set of accessibility switches. How many people in the rook are familiar with accessibility switches? Cool. So not everybody. OK for the people who aren't familiar, an accessibility switch is basically something just sends a simple on‑off signal, that closes a circuit. It's like pressing a button. They're used by people who can't use traditional input devices like key board, mouse, game controllers. The Xbox adaptive controller allows you to hook up the devices to an Xbox. These input devices can be buttons, a button mounted to a wheelchair head‑rest, a blink detector. It's the technology that Stephen Hawking famously used. This is an adaptive gaming kit. You are looking at here analogue trigger, a light touch supersensitive switch, a large button switch, a small button switch and the board to mount them on. This kit comes with two of these, two of the triggers, four of the light touch switches, three big switches, three small switches and two of these boards. One of them is flexible, so you can attach it to an arm, to a wheelchair hand rest. It comes with the labels to attach to it and Velcro to attach it with. There are ten switches, two analogue triggers, the two boards, all the stuff to fix them to. Quite a few of you are familiar with accessibility switches, you probably know how much that costs for ten switches. This is £89 for the lot. And you can go into the Microsoft store in London and pick it up off the shelf. This is huge. This is not just relevant to gaming, this is standard tech you can use to control an iPhone, to control your PC, this is turning the AT market on its head. This is amazing news. Now I said I wasn't going to talk about the Xbox adaptive controller, actually I am. Not about the hub. But about what happened next. They started talking about it. Firstly, with their holiday ad, this time last year. A few months later they ran an ad at the Superbowl. If you haven't seen this, I would recommend you watch it. Stick in Xbox Superbowl ad into YouTube. It's a bunch of kids playing with their friends and using adaptive controller and talking about what gaming means to them. And the Superbowl ad slots, I can't remember off the top of my head how much it cost, but basically, they're paid for a double length slot, a full minute advert. They're normally 30 seconds. That was over £10 million to pay for that advertising slot. They used it just to educate people about how important accessible gaming was. That advert was seen by about 100 million watching the Super Bowl. Seen by tens of millions of others on YouTube afterwards. You don't know if you have looked at the YouTube comment section, normally a hive of villainy. It was 100% positive. They loved it. Same on social media. The US surgeon general was tweeting. T pain, the rapper, was tweeting it. Cher was tweeting about it. It's like an alternate universe where everything was amazing. I'm sure there's a lot of people in the room working in efficacy. I'm sure you can imagine when this happens that it was quite an emotional thing, especially for people who have spent all the years trying and trying to persuade individual people to care. To see someone like Microsoft just drop £10 million on making hundreds of millions of care was amazing. It had impact across the board not just for accessible gaming. Amongst those people there will have been tens of millions of people who never thought about accessibility before in their lives. Their first interaction with accessibility is to think, oh, my God, this is amazing. So very, very cool stuff. So next up middleware. I'm talking about the frameworks that game developers use, the tools they use to make their games, specifically engines. Engines, it's similar to what you get in web, it's like a coding framework that takes care of some of the Scaffolding of making games. Traditionally these have been complete blockers for accessibility. Like the way that engines run through the visuals is completely inaccessible. I know Chris at the back has talked about this before. So, traditionally it has fallen on third parties to make plug ins and add ones for the engines to work in a bit of accessibility. That's happened a lot over the past year. Some really nice stuff, even big companies like Microsoft releasing some of these add‑ones. This is one of my favourites. This is called yellow Subs Machine. If you want to check this out. This is basically a subtitle presentation system. So, subtitles and games are pretty much universal. Almost all games have subtitles. Almost all games have terrible subtitles. So, this takes care of the presentation layer, basically. This costs you like $25, stick it in your game and that gives you instantly, without any work at all on your part, scalable subtitles, configurable colours and font. The ability to turn the speaker name on and off, cool stuff. $25. I said that engines have traditionally been a blocker to accessibility. That is now changing. So, this is a couple of months ago. This is somebody who works for Unity, the most popular game engine. Posting a thread on their forums looking for input from developers. They're looking for input on two things: On what the engine can do to help developers make games more accessible. They're looking for input on how the engine itself, the tool itself, can be made more accessible to disabled developers. And they need this feedback. They want the feedback. The address is: And we're starting to see results from it. They had a hack‑a‑thon in the summer. They had multiple teams working on accessibility projects in the hack‑a‑thon. Including a prototype of native cross‑platform screen municipal. This is still a prototype. It isn't released yet. This is huge. It's something like 60% of game development is done using Unity. If 60% of the market had out of the box easy screen accessibility that would be useful. Not long at Unity announced their prototype Unreal released their version. It's in the experimental feature. That's in use now. The first game using this technology is coming out in two weeks' time. So yeah, we've gone from this time last year, like the idea of game engines supportive learning accessibility was pie in the sky thinking. The two most popular game engines covering like 80% of the industry and working on this functionality. Anyway, next topic information. There's been an abundance of resources come available in the past year. There's good resources out there. This is growing and multiplied. We've had accessible.games which is the launch of a set of ability design patterns from Able gamers in American. Game designs.com is a UX game accessibility guidelines. Designing for disability, this is a really lovely YouTube video series. And the person who created this was speaking at this event last year Mark Brown. He's quite a celebrity in the game development world with a really big existing following. When he started making these accessibility tutorial videos, there were hundreds of thousands of viewers for his stuff. So, it spread enormous amount of awareness. Breaking news, as of I think 8pm last night ... I managed to sneak in a slide. The Xbox accessibility guidelines. This launched last night. This is a set of internal guidelines that Xbox have been using for their internally developed first‑person titles that have been evolving. They've got to the point they're making them freely available for the public to use. This was announced last night, you are amongst the first in the world to be looking at this. I'm going to give you the address. Here we go: These are the addresses for the things I have been talking about: And more breaking news. So, this is something that happened just this weekend and quite apt as we're here at Google. There is a gaming platform which is in the process of launching called Google stadia. Basically, you don't have any gaming hardware, you stream the games over the internet. So, there's no downloads, nothing to install. Google is in the process of launching this. They held a reddit ask me anything session this weekend. As part of that, they announced that they are working towards accessibility standards across all games and stadia. So, not accessibility guidelines that people are free to use, if they choose, accessibility standards across all their games. There are some companies that have mandatory accessibility standards already, but that's at publisher or studio level, people like the BBC. For a platform to be requiring accessibility across all their games is something we haven't seen before. That's going to have big repercussions across the industry. Including because most games are cross‑platform. If Google developers to require accessibility in their games and stadia it will appear on other platforms. This could be huge for the industry. Last on the topic of developers sharing information, I'm going to share with you a single tweet. I'll give you the background first, which is Assassin's Creed. This is about Odyssey, which is a game that came out 18 months ago. They did nice work in the subtitles and decided that they were going to track usage data, see how many people were using their subtitles. They tracked it. The figure they got back was just over 60% of their players were playing with subtitles turned on. Subtitles were turned off by default, 60% of players actively turned on the subtitles. They thought OK, if most of the players want to play with subtitles turned on, why not turn them on by default and. They did that. They tracked the usage data. They tracked to see when subtitles were turned on by default, how many people left them turned on. 95%. To make sure this wasn't an anomaly. They tried it on another game. Far Cry. Subtitle presentation in games is terrible. If there was ever a reason to fix that, this is it. I'm going to stick on the topic of social media for a bit but shift tack and talk about different source of information for developers, which is of course gamers. The past year has seen the rise of the accessibility megathread. This is people posting about an accessibility issues, getting huge amount of likes and retweets, loads of comments that are a gold mine of information on accessibility. I know Mark has had a couple of nice threads over the past year. There's been one topic in particular which has dominated it. This is this: I'm going to read them out. 2700 retweets. Me at 15: I want video games to have the best graphics, and biggest explosions and deepest stories and coolest characters to show that this is truly the art of the form of the future. Me at 35: I want video games to have an option to make text bigger. 3400 retweets. This is the complained about issue in tech today, text size. Games are designed and tested on big 28‑inch screens two feet from your face and they're played on a 40‑inch television like ten feet away. That needs to change, especially as we're moving into the era of platforms like Google stadia, like X Cloud. We can stream console game to a four-inch mobile screen. Basically, gaming needs to have its web move to responsive design. Gaming needs to do the same. This feedback, this is all informal. It's been having in more formal ways as well. This is a really lovely example. What you're looking at here is somebody streaming on Twitch. Typical set up. They're broadcasting their game play for the public to see. There's the picture of them at the top left. Underneath that is the chat window. What's happening in the chat window is one of the developers of this game is facilitating a user research session. So, this is making use of the streaming platforms that people are already using to carry out remote user research sessions. Really nice not just for overcoming the barriers of getting into people's homes, but the fact that it's public lifting the lid a bit on the game’s development process on the user research process and showing people a bit about what the accessibility process involves. This is really nice to see. This was recently, a couple of months ago this happened. It's spreading. At this very moment, Electronic Arts are running the same thing for their game. People have been getting games into their studios as well. This is from the co‑creation workshop that happened at Ubisoft in Monday trawl. Getting people in with disabilities for user research and co‑creation workshops, companies like Ubisoft and PlayStation and talking openly about the things they're doing in this area, which is inspiring. The information needs to flow in the other direction as well. It needs to flow from studios to gamers. Information about accessibility, about what's possible in their games. So, EA were the pioneers of this a couple of years ago publishing a portal that contained accessibility information about their games. Other studios have now picked up on this. A couple of recent examples. Gears 5, this a page detailing the cool stuff they did in the game. Same thing here with Ghost ReconBreakpoint, a long post about the function in the game. A lot of companies are doing this now. The reason I picked these two in particular, they published this information about the game launched. So that means that people are able to make informed purchase decisions, they're able to pre‑order the game. They're able to build up hype and excitement about the accessibility of the games and that word spreads and grows throughout the disability community. This is really powerful. The next on the topic of information for gamers about accessibility, going back to Google again. This is the Google Play Games app. This was, they launched a blind friendly filter. This is so important. It's a double win as well. It's not just a win for gamers being able to have information about which games are accessible to them. It's also a win for developers. Marketplaces are very, very busy. They're packed full of tons of games. It's a battle to be discovered, to rise above everything else and have your game found. If you have this extra bit of filtering, extra way to surface your games that people want to play, that's a valuable tool. So, a win‑win. I hope that's something you'll see more in the future. Events. This is quite a different topic. It's an area that traditionally has been terrible. So, this is industry events, things like conventions, Expos, where accessibility has been non‑existent. In the past year, that has started to change, and in two areas: Firstly, in terms of the presentations themselves. So, we have nice double live captioning here. This was at GDC. I think actually this was ... yeah, this was actually somebody who is about to announcement, they have live captioning here. They had, so this was EA. They had crystal dynamics with live captioning and interpreting. Xbox with their announcements, ASL interpreting and audio description on the livestream as well. Companies are starting to care about making the presentations accessible. Also, finally, companies thinking about making their booths accessible as well. Same kind of companies like Ubisoft, like PlayStation, like Microsoft, like EA, thinking about the height of their booths, the accessibility of their controllers, the sect of the information in the booths, making the events more accessible and inviting to people with disabilities. If you want it know more about that, this is a nice resource: This is a talk about event accessibility, specifically gaming events, where you've got those issues around how do you make a VR booth accessible to people with disabilities. The address is: So, a lot of these companies, who are publishing accessibility information, who are making their events accessible, it's the same kind of names that you're hearing again and again, companies like Warner Brothers, Ubisoft, like EA. This isn't by accident. These are companies that have dedicated, fulltime accessibility staff. This is something that simply didn't exist a few years ago. Six, seven years ago, the number of people working in fulltime, permanent accessibility roles was zero. It didn't exist. Five years ago, there were two people at Microsoft. Then Karen at EA, David at Ubisoft. Now about 20 people. It is escalating quickly. This is from last week. We're now actually starting to get the beginnings of accessibility being a viable creative path in the games industry. This is a role that's been publicly advertised, to be an accessibility project manager. If you fancy moving to Monday trawl, this is the job description. What's going to happen very quickly in the games industry is that there is going to be a skills shortage. So, these initial 20 people, this is spread across project management, across QA, and user research. But there aren't that many people in the industry that can fill the roles. There are advocates, but there aren't that many people who have experience of how to, like the initial talk this morning, about how to build an accessibility culture, how to embed accessibility within an organisation. That's the skill set that's really missing in the games industry. If there's anyone working outside the games industry interested in moving across, now really is the time. So, the best thing you can do is get in touch with game developers, every city has a bunch of game developing meet ups to speak to people, learn about the process. Speak to people in gaming and how it works. Sales pitch over. But you should think about it. So, I promised I was going to talk about everyone's favourite topic ‑ legislation. But first I'm going to talk about games! I forgot about the games ‑ how could I do that?

(Laughter)

Traditionally in the industry, it has been the indie developers who have been driving progress. That's small, independent developers, people with one to five people in the company, who are free to do what they want. They don't have to worry about persuading a team of 400 people that this should be a priority against everything else on the back log. This has continued. I'm going to talk about two examples. The first is a game called Sequence Storm. This is a rhythm racing game. What's on the screen here at the moment is a couple of screen grabs with the bottom chopped off. Can I change that? No. This is a couple of screen grabs from the trainer from the game, showing reduced controls, a high contrast ‑ sorry, yeah, a high contrast visuals. I can't remember what the last one was. Sorry, they changed my slides to get the logo on the bottom, so it's missing the text. They did tons of cool accessibility stuff. Even avalanche as well, they released a patch to make all the game play completely accessible. They did loads of amazing stuff. Next example is Eagle Island. This is a procedural platform. What you're looking at is a bunch of options for visual accessibility. So, you can adjust the contrast, add outlines to the characters, to the platforms, disabled screen shake and flashing. They had loads of other stuff as well, like being able to put the game play into slow motion, use any type of controller you want, options to reduce the controls. Tons of stuff. These two games are at the very pinnacle of the industry. They're doing more than any other game. These two games, even though they're completely different mechanics have one thing in common, they were developed by a single developer, one person. So, if one person can do all this amazing stuff on a shoe string budget, self‑funding, what can a company, a studio of hundreds of people and budgets of tens of millions of dollars do? If they have the right management buy‑in. If the company supports those efforts. We're starting to find out. So, this time last year, we were just starting to see games like Spider‑man, like God of War that were starting to include stuff like this. So actually, a range of different accessibility features in their games. Since then, I'm going to cheat here and use my phone to read out a list. I'm going to read out a list of a few games. Battlefield 5. Fifa 20, Metro Exodus, Red Dead Redemption Two, Division Two, Devil May Cry. Apex Legends, Gears of War Five, Ghost Recon Breakpoint, Borderlands Three. I could be reading out a list of the biggest releases of the year and this is a list of games that have gone to this level, implementing a wide range of accessibility functionality. That is an enormous turn around, especially when you look back, this is just 2015, Destiny. Destiny released a patch that added one accessibility feature. That was headline news. So, to move to the situation now where it's really not feasible to be launching a big-name game without considering a wide range of accessibility features is really incredible turn around in a short space of time. But a lot of these games are in the same position that like Spiderman and God of War were, they're starting to think of accessibility for the first time late in development. When they start their next game, they'll be able to think about that from the start. That's what I hear time and time again, they're like oh, my God, if only I knew that when I started making the game. The next game they will. The next couple of years are going to be a very exciting time. Now we have the boring games out of the way, we can talk about the cool legislation!

(Laughter)

One piece of legislation in particular, legislation called CBAA, this is CVAA being signed in by Obama. I'm sure there are some people in the room who aren't familiar, it's the 21st century communication and video accessibility act. It came into effect to plug a few holes in existing legislation in the USA. So, through the Americans with disabilities act there were accessibility requirements on communication and on television. Basically, that meant telephone, like having to have a relay service for like text to speech across telephones, all done manually. But the world moved on since 1990. Now most people don't do their communicating through telephones. Most people don't do their TV consumption solely through broadcast TV. People are using things like Skype, like WhatsApp, Facebook messenger, Netflix and all these things weren't covered by accessibility requirements. This is why this legislation came along to bring it up to speed to modern technology, meaning that streaming platforms now have accessibility requirements and digital communication platform have accessibility requirements. That includes when a game has communication functionality. So now, if a game has text chat, video chat or voice chat, that chat must be accessible. Also, any interface or information that's used to navigate to or operate that communication functionality must be accessible as well. This is the first time we've seen any kind of legislation that covers mainstream games. I'm not going to lie, when this came about, I was sceptical. Up to this point, the only reason that anyone has ever put accessibility in a game was because they wanted to. And that's how you get the good results, right, when people want to, not when they're being forced to. The compliance deadline for CVAA was January 1 this year. I was worried it would create resentment, people forced to do stuff that results in substandard solutions, blah, blah, I'm sure you're familiar. That didn't happen. So, I was very, very pleasantly surprised by the result. It's actually acted as a door opener. So, it's meant that now when people on the ground, who want the cool accessibility stuff start talking about it in their company, accessibility is already talked about at the highest levels of the company, all management know about accessibility, all the company knows about accessibility. It's opened doors for people. Also, just the kind of general culture you get within games studios as well. People don't want to settle. Accessibility has been there in the background, this thing that people are aware about. One thing I've seen time and time again with studios saying, OK, so accessibility for communication, that's something we've got to do. Accessibility is not applicational. Now that we're thinking about accessibility, right, how are we going to do a good job of accessibility not just for communication but across the whole of the game. Especially coming from a background in web accessibility and seeing people's reactions to compliance, this has been really wonderful to see that legislation has actually been a massive positive in the industry. If you want to know more about the legislation:

On that list, this was going to be the last I was going to be talking, before I figured legislation is probably a bit of a dry note to end on, so I thought I would end on something happy and positive instead. Securo. Is anyone familiar? A few people at least. You understand this image. This is a game that came out was it about, Easter? April? And this happened basically on social media. Securo is a very hard game with no kind of accessibility options in it at all. It basically social media, as it does, divided into two camps. One camp saying this game is supposed to be hard and challenging, people who want it to be accessible are evil. The other camp saying, I want to play this game, either you want me to, you're an elitist game keeper and you're evil. This happened basically. In amongst all of this, somebody tweeted saying that accessibility destroys game developers' visions for their games. This person had an avatar which was Kratos who is the protagonist from the God of War games. Corey Barlog, the design director of God of War saw this tweet and replied to him. 787 retweets, 3,000 likes. What happened next was another very well-known game developer saw this tweet, he copy and pasted it. Other people saw it. Copy and pasted it. Other people saw it, copied it, tweeted it to suit their themes about accessibility and pasted it. Hundreds and hundreds of games people across the industry tweeting this. This immense outpouring of support from game developers, I think, this demonstrates more than anything else I've talked about how far the industry has come. The accessibility now is not a case of a few advocates shouting in the corner hoping that somebody's going to listen. It's now part of the fabric of the games industry. We're not there yet. There's still a lot that needs to be done. Like I said, games are still starting to feel their way around in the dark, in their first efforts. There's a lot of consolidation that needs to be done. We need to work on processes, work flow, and on good practices. That will be some of the stuff you will hear from Lauren and Mark. One thing that is clear, we're in a very good place and it's going to get better. It's an exciting time to be in this industry. And they deleted my last slide. So ... thank you.

(Applause)

I know we're pressed for time. I'm going to pass straight to Lauren.

LAUREN: Thank you. I've got buttons excellent. Hi, my name's Lauren. I work for the BBC. I am a design researcher. This is just our way of saying user researcher. We use design instead because the BBC design does not just mean the things that you make, it's the way that you do it. I work in the children's and Education Department. That recently merged to be one thing. And I work for the games part of this. At the BBC, we make games and apps for children. I'm going to take you through that a little bit. I also wanted to explain a bit about, kind of, this is the first time I've done a conference and especially the first time I've talked a lot about accessibility. The reason is because at the BBC we do something called rotation. That means that in the user experience department, we get told that we go to a different department every one year, two years, three years. Meaning that we get fresh ideas, people coming into projects that the same person's been on for a long time and we get to see things with new eyes and this is what has happened and led me to taking up the mantle and going, right, our accessibility is not right. I want to do something about it. So, today's talk is going to be about taking something that you think should be better and continuing that struggle that somebody else has just put down and keeping it going, because accessibility should be a journey and you should keep on working at it. So, this is what accessibility looks like in the games team at the moment. This pitch will make a lot more sense when I get to the end of my talk. Games at the BBC, often people look at me and go, "You work for the BBC. The BBC don't make games." I'm like well ... our prerogative is to inform, entertain and educate. I almost forgot that!

(Laughter)

Entertainment, what was the biggest grossing entertainment in the media last year? Any guesses? Being in this room? It was games! Yay. It's kind of a no brainer for the BBC to get involved in games. Games is like, well, I might be biased, but maybe the most entertaining media that we produce as society. So, to me, it makes complete sense. What games do we make? We have brands, I mean, I feel like I'm preaching to people who will probably know this if you live in the UK, you probably have seen that bug so many times, especially if you have children and you don't ever want to see it again. This is CBeebies. It's aimed at zero up to pushing it at six. We have CBBC which stands for children's BBC. That is from where we pick up at six to struggling to 11. We'll get there. And then this last one is, you might not have seen this guy before, this is nightfall, this is the new stand-alone game. This is eight upwards. It's not CBBC or CBeebies, this is a BBC branded game. It's the first time we've done something like this. It would be great if you wanted to go a have a bit of a play on it. I'm going to give you a little insight here, it's not accessible.

(Laughter)

If you guys could talk about that, that would be really helpful. So why include accessibility? Again, a lot of people in this room you're going to go preaching to the converted. But I wanted to explain why this is talked about at the BBC. We have an excellent accessibility team and department at the BBC. And they go around and they make sure we're all doing our jobs. They very obviously take our passes off us and turn it round and this is written on the back of our pass. It is the whole BBC values, but the bit that I really want to look at is where it says, "Audiences are at the heart of everything we do." That's not some audiences, that is not most audiences, that is all of the audience. In the UK, somebody's going to pick me up on this, I believe it's 13.9 people who have disability. That's a lot of people to exclude. 13.9 million people. If you ever need to explain to your business why you should be including accessibility, that's a big number, you should go after it. Another way that accessibility is included at the BBC and why, you were hearing from Sam earlier and you'll be hearing later from people at the BBC about how to, an Ian was talking about, about how to create accessibility champions and things like that in your company. I'm an accessibility champion in the BBC. If you want to see what it looks like when we get told what to do and sent off into the jolly world to do our accessibility champion things, this is what it looks like. I'm hoping I'm doing a good job. So, the accessibility team came to us and said you need to make your games accessibility. At the moment they are not. We went, this is a good point you make. Let's just go and do that. We identified the need for guidelines. When you start off with a clean slate, it can be a bit daunting. I mean, I work in user experience and the idea of letting somebody down when your day to day is trying to empathise with people really doesn't make you feel good. Going into it with a clean slate can be really overwhelming. I kind of understand that for anybody who is not looking at accessibility in their company. But we started and it's important to do that. Our first guidelines, they were called the medal standards. This is going back way before I was at the BBC. So, please ‑ I'm going to have patchy knowledge. It might take me a minute. The medal standards is like the connotations of your normal medals, bronze, silver and gold. Bronze was the UI being accessible. For example, I'm going to describe a BBC game to you. We use studios, we are more like a commissioning board. But the bit that we own internally is the UI. Even though we commission our games, we want it to look like they all belong to the BBC and there's a consistent journey, especially for things like settings and menu and pause and select screens. So, bronze is making sure that these are accessible using a switch or using two buttons. At the BBC this is tab and enter and/or space, that it's accessible through a screen reader. It's got a minimum hit size, maximum hit size and colour contrast regulations. Silver, in these, in this guide line, you had to make all of the game play accessible through two buttons, and a screen reader and everything had to be colour contrast and everything had to be minimum standards for what you'd expect on the web. That's another point is that our games are on browsers. We don't only have to adhere to what is considered standards for games for accessibility, we have to adhere what is considered to be web standards for accessibility, which can sometimes be a really difficult place to sit in. Gold is the whole shebang. We've gone over and above. Accessibility is the point of this game. Accessibility is why we have made this game. You should not be able to not play this game. It should be physically impossible to not play this game. We started using these, the journey continued. We were up and running. We started looking at accessibility, I think, this is always a good thing to congratulate people when they've started. Because once you start, you can't stop. Some of the problems that we experienced were that agencies really struggled to deliver silver games. Another thing we need to point out is that we are not a triple‑A gaming company. We do not make years to make games. We take months. We have a quick turnaround. When I do user testing, I have one day in which to user test that thing and then tell the studio what we want doing. It's short time. So, the agencies really struggle to get everything in, because when you're on tight time lines like that, everything has to be perfect in communication and sometimes that just doesn't happen. Bronze games didn't include game play. As a new pair of eyes coming into this team and seeing that bronze just meant you can use the buttons, but you can't use the thing. I was like, what are we doing? It's like inviting a child it a party and not letting them in. Why would you do that? Why would you make all of it accessible apart from the playing bit? That's the fun thing. Then most games only managed to achieve bronze. These were the things that didn't work so well for us. So, being part of user experience and being used to agile and reiterating, we decided to give it another shot. We changed up what we did. Bronze, which you would consider not even the bare minimum, for making something accessible became BBC Gel guidelines. That's a set of user experience guidelines which is public facing. If you want to see all of the user experience guidelines for the BBC, you go to, Google, BBC GEL, stands for global experience language. We decided to put the bronze in this and that is a requirement. It's a minimum expectation. You have to follow GEL at the BBC. Therefore, it didn't even become, something that came into our sphere in accessibility, you had to do it for everything and everyone. We called them the inclusive design patterns. Next came the pillars. So, we worked with some external agencies and advocates to pull together an idea of what we should do, making everything accessible for everybody wasn't working with our games. We just weren't able to produce it at a good quality and the BBC quality is something that they really care about. They decided to break what we were going to make accessible down into four pillars. You have motor, vision, hearing and cognitive. The idea being that each game would be accessible for people who fell under one of these pillars, at least. These also became public facing. They are on our GEL website under how to decide accessible games. It is the driest web page you will ever go to.

(Laughter)

But it has all the info. If you would like to look at what we're using at the moment, please go there and it will be enlightening but not fun. Generally, the good thing about this was that our games got better. So, our minimum expectation was applied as a standard. This is what we were always going to do. The studios were contracted to deliver at least one pillar for all our games. They've managed to do that. Usually we excel to two. We included accessibility features, that became minister feasible. So, doing things like speeding games up, slowing games down, increasing size, adding subtitles, so on and so forth. This all became what we could spend our time concentrating on. But there were still some problems. This is the point in which I came into the team. I became an accessibility champion and I took hold of this. I decided I wanted to go out and do as much user testing as possible. We live in Manchester, Children's, we are close to an excellent charity called Everyone Can, who are based in Sale. They've been really great. It means every Wednesday, if I want to drop in to basically a bunch of kids who are experts at gaming, who have really diverse and complex needs, I can do it. I can take all our games at any point of the development they're in. So, I saw these kids struggling with our games still. I was like, well, we've got these guidelines. We've got these things we're told will help us, why are they still struggling? So, one example is the next step: Take it to the streets. This game is great, but it has a horrible sound track and it's stuck in my head still.

(Laughter)

This was supposed to hit what we call the vision pillar. The vision pillar for the BBC is being able to play the whole game through with a screen reader. We picked JAWS and voiceover. We got a charity to bring some kids in to our offices Henshaws, they're great. They were playing the game. Everything was not going swimmingly. I'm not going to lie. So, I talked to the charity coordinator and I said, "Why is this happening? Please tell me why this is happening." She said, "In my experience, children who are blind don't learn to use screen readers until they are in their pre‑teens, mid‑teens, late teens, depending on how much support they have." I want to make clear, this is not me, this is a sweeping statement of somebody else. So, I thought, oh, we're making games for kids who are like eight years old and we're making it on a piece of technology that apparently, they don't access until they're a bit older. I said why aren't they accessing it at this age? Usually, not my statement, again, they're learning to read and write in Braille and they're using Braille output. They're learning things that will help them in the workplace when they're older and help them to access stories and narrative and things like that. I said, well, that makes complete sense. Thank you very much. I looked back at our guidelines and it was all about screen readers. We hadn't done anything for people who have partial sight, who still rely a lot on their sight. We had nothing for children who have not yet learned to use screen readers. It seemed like a really obvious problem. Because we'd use adult behaviours and stuck it onto our games and hadn't done any thought process about what accessibility looks like for children, we had this gap. Any way, if you do use a screen reader and you would like to try out the Next Step two, take it to the streets, have a look. It was the first time we tried to do this. As soon as it went live, an internal colleague, who helped me on this, sent me a message ‑ by the way, well done it's live. Out of curiosity, do you have more budget for this, I have suggestions. I went, yeah, I thought you might Ben! The next thing that really grabbed my attention was operation ouch invasion of the snotulons. I know great name! This is close to a first-person user game that anybody's going to make. It's two doctors called Dr Zand and Dr Chris and we've got, it's quite a big brand of ours, kids enjoy learning about the human body and doctors and so on. It's known as being this icky brand, like they talk about snot and gross things and stuff like that. Invasion of the Snotulons, the doctors get sick and the other one, whichever the other one is, gets shrunk is sent inside them, and goes around with a snot blaster destroying germs. We decided to make this accessible for people who have motor impairment. At the BBC, this looks like making the game completely accessible through one or two buttons. The studio decided to pick one button because they thought it worked better with their plan of how to make the game more accessible. The problem was that we went to Everyone Can. There were children who have cerebral palsy, who use switches at home. They said can we play. I said of course, let's set you up. The way this works is that the cross‑hair for where you would normally be shooting at if you were in FPS ranges across the landscape and you have to time when you're going to press the button to make the snot gun work. The problem is that a lot of children who have cerebral palsy struggle to do games that have timing in them, because obviously they have problems controlling their muscles. So, these children really loved the game and really, at first were excited to think they could play it. Suddenly they realised they couldn't, because they couldn't get close enough to the germs to splat them. The next problem was that the way that we created challenge in this game was to add a timer. Obviously if you're having to wait for your cross‑hair to range across the screen for ages to finally get to that last little germ in the corner, you're not going to be able to do it with a timed set. So, we had to remove it. The suggestion we made to add a different challenge came too late. There is no challenge in this game for children with motor impairments. It became a no fail game, which they found really boring. After about two minutes they turned it off and went, I don't want to play this anymore. This was a massive eye opener for me. It was like we've not got enough features. This isn't working. The last one was that the pillars are unbalanced due to the way that we develop the games, it's ‑ I'm going to say easier, but that's subjective. It doesn't take as much time or effort to produce some features as it does others. And the features that we had put down for the hearing pillar were, some of them weren't impossible for us, we said the game must include haptics, when you make a game within a browser, haptics are not possible. Studios said we can do the hearing pillar. Great, we didn't think about that. So, we found that we were having to push back a lot on studios and say we want more. Where are we now? I'm reviewing the whole thing. I've decided it's not acceptable and me and my team in the games team, we've gone, we don't really want this anymore. We think we can do better. We're doing a big research piece. It's a three‑tier research piece. One tier is user research. One tier is business needs and one tier is industry specialists. The part that I'm doing is the user research and the business needs. So, we're going round the UK. We've got about 20 families who have children with complex and varied needs, who are all under the age of ten and they love games. It's been so eye opening and it's been so inspiring to watch the children play their games and say what they struggle with and what they want and being able to listen to them say, you know I love this game. But I just can't do this or that. Some of the work arounds, the other day I watched a little boy who's blind who uses a screen reader playing games. Gets to a point where a notification wouldn't read out. He took a picture and put it into seeing eye or something like that, and it read it out to him and he went back to the game and I was like, mind blown. You shouldn't have to do that. But just the creativity that they've had to develop to be able to use the things that we take for granted is unbelievable. The videos of and the recordings taking of kids doing that is going down really well internally. It's something I would say to people doing accessibility research is that if you want to grab the attention of your business, go, take your product that doesn't work to a child who really wants to use it and take a video of them failing to use it and getting upset about it. Because it opens doors like you have no idea!

(Laughter)

I think the point I want to make is that the journey doesn't stop. I really hope that this time next year I can come back and say this is what we're doing now. We still think we can improve this because technology is always changing and kids are always getting smarter and better than us at tech things. But it doesn't stop. You need to keep on looking at what you're doing. You need to keep on looking at your users, because they're changing as well as you. So, thank you very much.

(Applause)

If you have time for questions, we'll do it at the end. Over to Mark.

MARK: Two things to hold and I don't know what goes in what hand. Hello, I'm Mark. I'm a principal user researcher at Sony PlayStation or worldwide studios Europe, but no‑one really knows what that is. So, I say PlayStation. I'm an accessibility specialist. I've been working in UX and accessibility for nearly ten years, which is a scary thought when I counted it up. Here's a lovely selection of some games that I've worked on. Majority of these, I've done a lot of accessibility work as well. Stuff from quite recently with Dreams, blood and truth, Erica and until dawn and tearaway. I also think that, it was about 25 to 30 games I've worked on since I joined PlayStation as well. Quite a back catalogue now which is quite cool. I know it's a pain when you're trying to take a photo and I move onto another slide, if that happens and you really want that photo wave and I can go back and you can get a good shot of the slide. Cool. So, there's a selection of some of the games I've worked on. What do I do for my job? So, it's four main pillars that I work with. The first one being usability testing or UX, with the lovely PlayStation controller icon there. That's pretty much working out what players are struggling with in games, if they don't know where to go, what to do, what's confusing or difficult. Removing, to borrow a phrase from Sam, the friction is what we're looking at there, trying to remove that to make sure the experience is as smooth as possible. Next, we have appeal testing. We get players in to find out what it is they like and don't like about the games we're making. And also the extent to which they like and don't like things and also confirming if characters are particularly interesting, because sometimes you're not meant to like characters and if we just reported and said no‑one likes this character take them out, that's a bad thing, because they're meant to be a villain or something. I will skip accessibility for a second. Narrative is the usability of the story. Anything that's potholes, character motivations even understanding the characters, knowing who they are, how they're connected, anything like that. Making sure that players understand what the story of the game is. Lastly, why I'm here today, accessibility. It's been a big part of my role. I've helped to push it within the company. When I started, there wasn't much chatter. I was kind of in my own bubble for a while. Didn't know what else was going on in the company. But certainly, it's progressing and you can see in the last year, even across the six years I've been at PlayStation, it's come an incredibly long way and I'm very happy to be part of the accessibility community at PlayStation. When it comes to accessibility, again, four is coming up a lot today. There are four pillars to the accessibility part. First, we have internal guidelines which I put together over a number of years and a number of revisions, I think before the first version launched, there were 41 drafts, to give you an idea how long it took to put together. We do accessibility reviews, which is what I'm talking about in more detail today. Accessibility testing, bringing in users with specific requirements to make sure that our products are working for them. Because as best we can do with reviewing, it's no contest. You have to get people in to play the games themselves. Then we also do accessibility workshops and inclusive design with our team. So that's going to the studios, presenting, telling them why accessibility is important, if they've not had that step yet. Then doing workshops with them so they can think about all the ways they can make their game accessible. As much as I see the majority of what Europe is putting out, and to some extent the US and Japan, I will never know a game like the development team. It's better to get them to think about how to make their game more accessible. Then in terms of when considering accessibility, so usability and user research normally happens around two years before the game goes live. Not always, but as a rough estimate. Accessibility needs to be thought about from the beginning of development. As Ian said, we're in a position where a lot of studios were shipping games, adding in features fairly late and doing some accessibility. While that was great, it was not nearly enough. At least in my opinion, anyway. I guess the opinion of most gamers who talk about it on Twitter and Redo. Games that shipped in the last year, they're starting to think about all the accessibility that they can put in within the games, which is great. When we're thinking about, when I'm talking to teams, it's about identifying the core pillars. Again, just by, because I want to use the Sony buttons, it's four. So, with the core pillars, thinking about what is the game trying to do, what are the main mechanics of the game? What do we need to think about? What can't we sacrifice, when we're trying to make the game accessible? If it's a game which is a narrative game ‑ narrative games, a big part is they're cinematic, so making sure that subtitling is pretty important. Narrative games rely on timed button input. Thinking of the timing and accuracy of button presses is a big part that. Things like that we have to consider when it comes to consider what is the most important thing for that game. This will obviously change from genre and genre and game to game. What I tend to show to a lot of teams is this flow, which helps to put accessibility into a bit more context. With accessibility, to borrow from Ian's previous talks, from previous conferences, there are hundreds and hundreds and hundreds of different medical conditions and trying to design for all of them is nightmarish and impossible. But when you boil it down to essentially these five areas, then it's a lot more manageable. There's a lot of overlap. The way it's presented especially in terms of games, is thinking about the flow and interaction or the interaction loop, I guess. You have receiving the stimulus, this covers the audio‑visual side of things. You could include touch and haptics on that side. In the middle you have processing and determining a response. This is cognitive, neurodiversity. At this point the player, the game has sent a message to the player, the player is comprehending that and working out what it wants to send back to the game. Then sending an input back. That is motor, using hands or if it's like a dancing gape, your feet. Speech is also on there. It happens, it's a rarer one. Big one for Sony would be Sing Star. With that it's about pitch rather than word recognition, which is quite good. If you remember back on the Xbox 360 Tom Clancy's End War, that's the last one to use speech recognition on a console. You could have things like the voice commands at a console level where you say PlayStation go to trophies or something like that. If you take one thing away, this is a good slide as well, so it's a lot of information in a very short amount of time that I tend to give to development teams. I found that the two main points across the board are applicable for game design is, for accessibility in game design, communicating information in multiple ways. Good example is with colour, so if you're using again red and green as good and bad, putting AI plus and minus there it helps to denote that red is bad and green is good. Offering flexibility. This is providing multiple options that players can turn on, better than binary ones are sliders. Sliders are fantastic for game accessibility because that means that players can set exactly the size that they need rather than on‑off. Like most things in life there's no one size fits all solution. Having multiple solutions is even better. And then to break down the communicating information in multiple ways, it comes to this holy trinity. You have visual, audio and haptic. If for example, you have a sightless or low vision gamer, any information that's conveyed purely by visual cues is going to be missed or hard to interpret. Then the game needs to provide audio and hopefully haptic feedback as well. Similar for audio, if you're deaf or hard of hearing, you rely on visuals and haptics. If you need to turn off the haptic, you turn off the visual and audio. In first person shooter games you have a red ring to show the direction you're being shot at. You have the audio cue from the gunfire and the control vibrates to let you know you're being shot as well. That's an example of multichannel communication. Right so with that out of the way I'm going it talk specifically about our reviews. And how we go about doing them. These are the eight, nine if you separate text and UI out, areas that we really consider when it comes to doing an accessibility review. It's similar to thinking about every kind of medical condition, it's a lot to think about every single kind of guide line that developers have to hit. So, making it as simple as possible and all-encompassing as possible is a good strategy. Thinking about colour, contrast, audio, text and UI, subtitles, controls, difficulty and assists. Difficulty and assists go hand in hand as well. There's also kind of four bonus groups. The first three tutorials, menus and safe systems tend to fall into the usability side of things. There's a lot of cross‑over between usability and accessibility, they're both about the user so it makes sense. Then online communication, which is a bit more on the legal requirement side with the CVAA and the European disabilities act, I think 2023 that's coming into, I'm sure Ian can correct me.

IAN: Near enough.

MARK: This is an example of what my check‑list looked like. I think this is the most up to date version I have. It's going through using a basis from the guide loins that are existing, such as Ian's game accessibility guidelines.com, able gamers cloudification dotcom and the IDGA game accessibility special interest groups top ten. I'm glad I got those letters in the right order. It's a big list of everything that developers should be doing. We originally had it broken into three groups taking the web accessibility guidelines as a cue of compliance of A, AA, AAA. We found since we were telling developers hit the AA it made sense to say hit the basic group and the advanced group is if you want to go further rather than giving them three groups and saying do two of them. It sounded a bit weird. Then it's broken up on the left in terms of those groups that I've already showed you, like visuals, audio, text, subtitles. They were the key areas. But using this and putting it into practice was incredibly difficult. Games do not appear in this order, issues don't appear in this order. Trying to track them was incredibly difficult. There was a lot of scrolling up and down and trying to make sure that things were going in the right column and it got a bit messy. Also, there were games that I reviewed where within the first 20 minutes, I had five things that didn't fit technically within any of the check‑list guide loins that I had. So, it led me to question, this is a good resource, but I don't think it's the best to use for a review. Some software that we use for our usability both reviews and testing is mind mapping software. So, this is really useful stuff. You create branches and you can easily drag and drop. It's great stuff. I recommend using it. It's the one we use is Mind Manager or Mind Jet, I forget which one. It's very good stuff. This works really well when we're doing usability research. Like I say, not everything comes in the nice order that you might want it to. When you can drag and drop stuff, create new groups, merge everything together it works incredibly well. The brainwave idea that this might be useful for other type of research, it worked. We ended up doing much, at least my feeling, much more thorough research and easier to capture the information using the software. So, with this, you could either go by those visual, audio, text, subtitle groups or do thematic groups such as the tutorial or the story mode. Again, it's all really over to however you might want to do that. Then when we do our accessibility reviews, there's five, I will tell you about the fifth in a second. We give each one a rating. So, we rate with thankfully they're all hopefully accessible using colour and symbols, but a tick to say we believe this feature is accessible. And there shouldn't be any barriers and it's follow best practice guidelines. We have a bar or the stop sign as a way of saying we believe this is partially accessible. So, something about it, it's like you're almost there. You might have subtitles, but they're not the best formatted subtitles. It's like you're on the right track kind of one. We have the cross, which is we believe this is inaccessible and will create a barrier for users. Then we have the plus which is an opportunity. We don't like to give recommendations because we're not game developers ourselves in the user research team. We can at least, with our knowledge of best practice and guidelines, we can say, well, actually you've done this, if you want to take it to the next step and make it better, this is what we suggest. But not as a mandatory you must do this kind of thing. Within the last year or so we added in critical, because there were some inaccessible ones that were so inaccessible when we did the review that inaccessible itself didn't quite do it justice. We felt it would get lost in the rest of the inaccessible issues. So, we added in a critical one as well to make those stand out as like, if you're going to tackle anything, this is where you need to focus first.

FLOOR: What's the icon?

MARK: A triangle with an exclamation mark. It's yellow, so it wouldn't have shown up well on the slide. OK, so, with that out of the way, I'm going to do and say it's the world's first ever live accessibility review. Maybe. Firstly, just out of interest, has anyone done usability or accessibility reviews before in this room? Cool. Good show of hands. So, out of those people, do you mostly, hands up again if you mostly use heuristics or guidelines to compose those reviews? Roughly the same number. Cool. I'm not saying throw that out of the window, I'm going to show you how it's a good way to approach this without having to be so stringent and stick to those guidelines. If anyone works at Rebellion in this room, I'm sorry I'm going to go through your game and show a lot of inaccessible things about it. This is a game called Strange Brigade. It came out I think two years ago, a year ago? It's a cooperative four player wave‑based third‑person shooter. It's basically, you and three friends shooting lots of mummies in Egypt is kind of the elevated pitch for the game. You can play it singer player however. I will show you how I would approach this doing an accessibility review. First, I am a settings menu nerd. I always have been, I don't know where I got it from. Even when I was a kid, the first thing I would do when I got a game is open up settings and see what I could turn on and off. It's weird. I don't know. It's very useful here. I would always start with the settings menu. I've done accessibility reviews in the past. I've spent almost an hour just on issues from the settings menu alone. Fantastic lace to start. So much to do before you even start playing the game. I'm going through a view of the options it here. With my accessible coloured ticks as well, blue and orange! First option is settings for subtitles. You can turn them on and off, which is good. You have a slider by subtitles. Set to maximum. Very good. You will see subtitles later on. I don't have a slide with the smallest version on, but they're very small when they're small. You can change the letter box capacity as well which is the solid background colour behind the subtitles. That's good. As I mentioned before, sliders fantastic for games. Just having on‑off never usually the best idea. But it's a good starting point. Next you have a bunch of assists here. You have auto reload, which is nice. It takes the pressure off a player so they don't always have to press square to reload. Players have a single shot weapon to play the game with. Pressing square after every single bullet is a pain for all players, so that's nice. You have a snap on that is for the nearest enemy or trap. It doesn't snap onto the nearest barrel. A slight oversight there. You have the ability to halt to aim, tap L2 you're in game mode, or hold L2 and you can continue to aim. I will jump ahead to the game slightly here. They do cancel each other out. If you have hold to aim turned off, you lose the aim assist, it locks onto the nearest enemy but you're on your own and you have to come out of hold to aim and go back in again which is the same as using hold to aim. I will point out there, we have our first red flag, text size in the game. It's very small. It's using a very stylised font. Already before we get into the game, we can see this is probably going to be an issue that will continue. Next in the audio we have separate sliders for music, effects, dialogue, and master volume, definitely one not to forget to have a slider in. A lot of games set their volume levels all at 100 to start the game with. This may not always be the best audio Mitch. Even at 100 sometimes the background music or sound effects can be quite overwhelming and be even louder than the dialogue also set at 100%. While they have the sliders not the best that they're all at 100% to start with. We can control those individually, which is great. Now to controls. We have separate sensitivity and inversions for the X and Y axis. These are often put together in a single setting. So, it's great to see them broken out here. Because for some people you might be inverted one way but not the other way. Having to put up with controls that you're battling against the entire time is an issue. For any gamer really not even gamers with motor needs. Then we have here an ability to configure the key bindings, you think great. OK. Actually, for some reason on PS4 it's the computer key board bindings. Erm... ... and you can't change them to PS4, it's weird. I don't know why. So confusing. Let’s move on. Next in the interface you can turn on and off and even set to to show when they're relevant as opposed binary on or off, lots of elements like your health, enemy health, when you collect gold, a bunch of other things. This can be good because a lot of times it can be overwhelming if you have a lot of information on the hud, it's nice to configure what you want on and show it when it's relevant as well, which is pretty good. Character set up next. I think I have a video next. Hopefully it will play.

>> Frank Fairburne soldier of fortune. Mark machining this is not a trick question, would anyone like to posset what is the issue with what I just showed you?

FLOOR: Transition?

MARK: No, although that could be an issue. It seemed relatively smooth. But camera shakes can be an issue.

FLOOR: Distracting in the background?

MARK: Animations in the background can be an issue. What was wrong is that they had the narrator telling you the character name and giving you information but there weren't subtitles for it. So that's something to look at as well. Subtitles are not just for cut scenes and game play. It can happen in menus as well. It's good to look out for little things like that too. Next, so this is the weapon loadout. We've got our big gun here that we can choose. Let's look at a few things that might be issues on this slide. Again, we've got our small text, incredibly small text. It's, if I do one thing in my life it's going to be make text bigger in games. In the top corner you have a white, creamy text on light red background. Contrast is going to be an issue too. Here you have got red and green being used but an up and down triangle being used to show the extra meaning. This is good, it's communicating information in multiple ways. But there might be an issue with the colour of the main bar which is this brownie, reddy colour. If we put a colour-blind filter onto the slide, you'll see that the top bar which was green basically disappears against the red‑brown bar to show what the base was and increase was. With colour blindness it's hard to differentiate the true. You can see the red still showing a bit, yellowy orangey, you have contrast but the green is getting lost. Black and white, or check for colour blindness I should say, doing things in grey scale, black and white is a good way to give you the idea of how it will look regardless of colour. News came out recently about a game called the Outer World, creative director or studio head is red‑green colour blind. So, it was designed in black and white to start with and therefore they wouldn't need to show the meaning. Kind of getting into game play, kind of.

>> Egypt, land of ancient secrets and mummified mysteries.

>> Some of you probably owe your lives to the valuable undercover work she does for the department.

>> Veronica! An invaluable contributor to the brigade's efforts.

>> My last assignment was to join the dig expedition of Sir Edgar Harbin, a wealthy Egyptology looking for the tool of Seteki.

>> Black hearted fiend.

>> Yes, the infamous witch Queen of ancient Egypt. Her final resting place has been lost for millennia. Miss Brownridge's task was to ensure it remained so, but her last communication indicated that Harbin had found the tomb and was about to open it. We haven't heard from her since and must now fear the worst.

>> Oh, dear, oh, dear!

MARK: I quite enjoy that it ends on oh, dear, oh, dear. I have a lot to say. You had three characters speaking in the scene and two subtitle colours. You have a yellowy colour for the charmingly British narrator person. And then the voiceover that was coming from the woman on the radio was white and the dialogue for the male character who was in the blimp with the other character was also white. They don't have speaker identification, putting the name and colon to show them. They don't even use a different colour. Anyone who isn't the narrator person is all white. The narrator is yellow. Any other character beside the narrator doesn't get differentiated which is a bit of a problem. The subtitle size isn't great. This is at the largest size as well. I would guess that they're maybe not as big as they could be because of this issue here. Aahhh! What you have here is some really badly formatted subtitles. We don't have speaker identification. You don't know when people are changing talking and here you have four lines of text on screen at once. For the most part, it seems that they break it up based on when a different character starts talking. So, you end up with long blocks of text. These are really bad to read. A lot of guidelines will talk around 42 characters per line, no more than two lines of subtitles on screen at the at the same time. That's really not so great. Ways you can do it, is you can break it up like this. You can have, with the speaker identification, like this: You have two sentences there, broken up per sentence. It's always good to start a sentence on a new line. Next:

We put the ellipsis to tell people the subtitles will continue, that's not the end of a sentence. This sentence is too long to have on two lines of text. Again, two lines of text, another full stop. Finally: It can easily do the same thing, four lines of text, it's about having these intelligent subtitle breaks and that's an example of how to do it better. Next, these are little interstitials that show when you get a new enemy, in this case the sinister stinger, his tail glows green but it's not a weak spot. They put a drop shadow on the text. It's all caps which isn't the best to read. Sentence case with capital letters and lower case is easier especially for people with low reading ages and dyslexia. Here, because it's black and white and white text, you end up with the text lost against light backgrounds. Finally going to get to the game playing, it's about lunchtime, I will hurry through this. This is a shot from the game. I'll go through some of the things you can see on this image. Firstly, there are positives. They are using letter boxing or, in this case a translucent black background for the text. It makes it slightly easier to read. It isn't as lost against the background. That's nice. However, in the top left-hand corner, where you have your objectives it's in all caps. They use a light white‑yellow text and light orange block shadow which makes the text blurry to read. It's in all caps. For the tutorials, they're small text, using a very cursive font, which is not especially easy to read. You probably can't see that one, that's the distance to your objectives. It is the smallest text in the game. It's so tiny. It's so bad. Also, you have these small icons here, it's showing you have a pistol as the secondary weapon. You're quite right to squint. Again, as mentioned previously, even just standing ten feet from a TV and getting a good idea for the icon size is very usable and would probably stop people making such small icons. You have here text that doesn't have that background as mentioned previously. The game is set in Egypt. It's very yellow. Choosing that colour and that drop shadow for the front is not a good idea. I'm just going to say. Next, we have another shot from the game. There are enemies. Again, enemies are quite dark, there's a lot of shadow. It's very hard to spot them. Having more high contrast options for the enemies to help them stand out against the game would be a nice idea. Here again we have got cursive text. No background to it. Easily gets lost against the environment. This is an instruction to say shoot that thing in the middle. You have a cross‑hair which again light colour, light background it will get lost in the game play. That's another thing to look out for. These are in the wrong order. This would have been a good transition. That shows the state it's ready to use or recharging, that is shown by colour alone. That can be misinterpreted. Both light, bright, white colours. Then we have barrels, red barrels that mean shoot me like ever video game ever, unless you're colour blind. There's a barrel on the other side of the screen with no shoot overlay on it. There is an effect to it, which does help, but even with the colour filter put over it, you can see they're less distinguishable than when you don't have them. Then lastly here we have some very small UI enemy health bars which are very small, thin and hard to read, which is very difficult. Then one of the worst offenders in the game are what I like to call the spooky hands. They show up when an enemy is off screen and about, or in range of attacking you. The spooky hand will come at the bottom of the screen from the side or from behind you or from the middle part of the screen to indicate there is an enemy there ready to attack you. Except it's almost always in shadow and it's a shadowy hand. So, you never see it. It wasn't hard getting damaged when I was getting the screen capture for this, because I never saw that. It's so bad. Again, low contrast UI elements that are pretty bad. They have a white outline, but it still doesn't stop it getting lost in the shadow. This is a weapon upgrade screen. We have low contrast here. Light colour on light colour is never a good idea. Even with a drop shadow it doesn't help it stand out as much as it probably could. Small text again, in all caps, again doesn't make it the easiest to read. When you're in all caps you lose ascenders and descenders. They help letters become more readable, when it's in all caps it loses that. Also, the contrast doesn't look particularly great on that text. I checked it, it's actually all right, but the small text means that contrast seems to make it actually worse. Or appear worse. We have another example of colour usage. You have a yellow arc when you're throwing the dynamite in this example. That means that it's not going to be in range of an enemy or hit an enemy. It turns red when there is an enemy in range, to give you an idea when it's a good time to throw the dynamite. If you're colour blind, they look almost identical and makes it very hard to distinguish whether or not you should throw the dynamite. You get a receptacle over the enemy if it will hit them but you're not going to be super accurate. Accuracy in games is another thing to look out for in terms of inaccessibility. Next another common thing is buttons you have to hold. Every time you need to interact with a door to unlock or a treasure, you hold square. Which is rubbish really because the only other thing on square is reload. If you don't have your gun out why would you be reloading, why not make it square. That feels obvious to me. Then also, the icon for that is pretty small too. And I should mention it's not just square, to collect the souls of the dead enemies you have to hold R2, weirdly enough, if you're in range the souls they'll come to you any way. If they're further away you have to hold R2 or just move closer. Lastly, you have some puzzles that require a lot of precision in terms of aiming at the correct parts. This is a pipe mania style puzzle. You have to shoot the parts of the snake to get it to line up and create a continuous body for it. If you miss the shot, you're going to ruin the puzzle because you'll shoot something you didn't mean to. And then you'll have to start or have to redo parts of the puzzle which are not particularly great. One thing I forgot to mention is the game has autorun. You don't have to click L3 or press a button or press and hold a button to make your character run, which is a really nice feature. However, the speed at which it is enabled within the game actually is fairly slow. Getting away from enemies is tricky. Having the option to set how soon you go into autorun could be an option to look at. Cool. That is a whirlwind tour of a small fraction of the game. Again, looking at mostly colour, contrast, audio, text and UI, subtitles, controls, development and assists. I think I covered pretty much all of those. Great. Now it's nearly lunchtime so I'll finish up. Summary, in my experience not everything fits neatly into a check‑list when you do a review. What I find more effective is to understand the source material and be able to apply that to the game, just to know these things are going to crop up, obviously using tools, such as contrast checkers, colour blind filters, all manner of things that you can mostly get for free online is a good way to help validate some of that information as well. Also being able to group things into broader themes and categories and not just point out a big list of issues that a game might have, but to say, hey, the biggest error for you is actually colour. My favourite, the settings menu is a great place to start, if you're doing it for games, look there first. You can find out a lot of information before you even start playing the game. Consider the game's core pillars and would be an intentional barrier. A lot of times with intentional barriers that would be in a shooting game you need to have precision and accuracy to shoot something, there's often ways you can offer flexibility by changing things of like snap aiming, like this game has and offering ways to allow players to play the game and get around the barriers to an extent. Think about communication of information and flexibility of options. A lot of what we went through a lot could have been changed by designers thinking about one or both of those. Lastly, I can finish by saying reviews are useful for identifying barriers. This is always the first step for reviews, we look at this first, pick out what are the biggest issues for the game teams to get rid of what are going to be the biggest blockers, then they can ideally resolve them and we can get in for user testing. Nothing is better than having users in and crying when they can't use the thing they're meant to be able to use.