Ethan:

Make sure that's working. OK. Yeah, that seems to be working so. Uh if I share my screen as well. [pause] Just checking. You may have to let me know if this is um view if you if this isn't too like blurry and I've had issues like sharing my screen in the past, but it gets a bit blurry. Is this more or less legible, or do you need to, do I need to resize the window do you think?

P3:

Well it's legible enough, but the stuff on the left might need to be zoomed in.

Ethan:

Yeah, I'll zoom I'll make this one a bit bigger. This is a quite a big one, so. So yeah, to start with. um. I just would like to have a quick look at these three models on the on the left, I found these um Just within the literate show, and I was doing my initial research about how to go about this set of interviews, basically, and I'd like to know how, if if these models kind of fit what you do, in terms of making cultural heritage applications. Sorry, um. So. I can run you through them real quick, if that's helpful. So for this one on the left, it's overall it's 25 sets, 5 stages with 25 sub steps starting with an initial phase, the concept phase, design phase production, and opening phase. So if it's readable, I'll leave it there. If you want have a quick read through it. So the initial phase starts with your idea creation. Sorry this isn't your model. By the way, just to make sure it's clear. So you start with like idea creation, internal team checks, creating the brief and then interpreting the brief, then creating concepts. Then the actual design of the exhibition and the production of exhibition and the like the post open like the opening and then post opening. Then in the middle you have another. This one's more non-linear, so these like 6 components are creating an exhibition. So initial idea, then management, design and production. Understand your audience, the associated programme and the curatorial side. And then on the far right, we have, uh kind of similar to the one on the left where it's split up into conceptual phase, which is the idea gathering and development. So that's the planning and production, the operational phase, sorry, the functional phase which is operating and the terminating and the assessment stage which is, like, what did you learn? The evaluation and then getting more ideas to carry on to the next stage? So yeah, just wondering, do you think these models kind of fit in with what you guys do at Noho? I hope that makes sense.

P1:

We don't, really unfortunately, we never have have an assessment phase once the projects sort of approved by the client, it just it just happens. Uh we don't have any sort of. Maybe the museum itself would run the kind of assessment things, but we don't really get involved in that side. I'm not saying that everything we do is perfect, but that's the the budget is run out. You know, once we deliver it so. Uh, but it's obviously an important part of of any exhibition et cetera. But generally we're not really that involved in it unless it's a very um unless we're dealing with a university or something where they they kinda do workshops and stuff and then come back to us, but generally we're we're. We have a time frame that we have to work within and.

Ethan:

[Senior Unity Developer], what do you. Did you have any thoughts about if this fits how you would?

P3:

Well, all three models reflect one way or another how we how we do things with the exception of the assessment at the end. [though?] I believe sometimes there is some assessment when when it goes on to be redefined or next stage like with the [linear] stuff, I believe it's analysed afterwards. So what can we do differently, the next time or for another project. Which kind of goes hand in hand to the first phase of the next project, most of the time, right, [Managing / Creative Director]?

P1:

Yeah, that's right, actually, yeah. And. [cough and pause] Yeah, I mean. I always like some sort of evaluation thing, but it it's not something that that is. Um. It's more on the client side that they do that, but I suppose part of the project, but it's not something we do.

P3:

Also by that time...

P1:

I mean, we know what we know, how we can improve it and all that, but um. Regards, we don't run workshops or anything like that. Yeah, but the client would.

Ethan:

Have you got any thoughts on whether this fits for your process, [Web Developer] or?

P4:

Yeah, most of it. Like so like I guess we would have kind of part of the manager kind of stuff. We would kind of have little I suppose kind of small workshops with that, with the kind of client and then depending on how.

P1:

Yeah, that's true actually.

P4:

How, how, how they kind of use it? Do we do we do we add stuff to it or do we edit it to make stuff clearer for them? Kind of there's.

P1:

Yeah, perhaps the evaluation is happening [slight pause]

P1:

Throughout the, throughout the project.

P4:

Then obviously, if we kind of if we come up with features, during the evaluation stuff that kind of then kind of moves into different projects or projects down the road kind of thing.

My Model

Ethan:

Cool. So now that we've had a look at those models, I'm going to take us onto um the one I created from my discussions with you 3 and [Digital Creative Manager]. So it looks a little. Messy, but I'll give you a quick run through of what each step is, so I determined the projects always start with just like the project idea. So the idea comes like just generate essentially either from I guess inside Noho or from a client. And then working to that you get. You then head into the briefs that each so some of these might be as well self-explanatory. So yeah, brief for the project determined and shared to whoever needs the brief, essentially, and then a carry over stage, which is sort of going back to previous projects, grabbing assets and scripts or even ideas like you're mentioning. And then bringing them forward for this project. Then the initial design phase, so determine what the initial design of the project is working out the concept of the application. Concepting and then wire framing so it creating the wireframe. Wireframing came a lot. In came up a lot in your interviews. Then that moves on into the design development stages, so I've got software, checks / research and design at the start, so you're checking to make sure your software is still what you want. The technology you want to use. It's pieces like that. Then it gets a bit more tricky when you get to design and development, because there's always multiple things to design or develop like you have your app or your website, or the video for example. So sort of squashed in. So the design is the overall design stage of the project be that with the app or the video or the website. Which which I found consists like sketches. Wireframes. [unsure] Designing the assets. And then development splits out into the planning stage. So planning out what needs to be done, which came up more with the VR like this plus VR project working out how to do it, what we need to what what can be done, figuring stuff out like that. Then creating the initial prototype. Creating the prototyping, that one is fairly self-explanatory. Then moving forward into further development of the application. And the testing which as was mentioned a few times, happens all the way through which I've split into these two stages of pre-client testing, so that's more when you.

[Internet Issues]

To so we have the internal testing. So you make the prototype, you test it within Noho, and then you have this like the loop of change requests, new features, change requests, new features. And then once that bit is like done I guess and then moves on to testing with the client, which is. It's a similar like steps, but this time it's more so the internal testing would go internal testing, changing the feedback that would loop a bit and then you get the client feedback. who would then give more changes and then you loop again going internal client internal client and then once that's done you move on to the Uh, the project delivery. Which is where the project is considered complete and you have your launch. It goes live on the App Store or on a tablet depending on whatever a launch is for this project. This is where it happens. I've lost my mouse, there it is and then once the launch is done, you move into the post project support. So like maintaining websites and servers. Bug fixes, google analytics, stuff like that. And as well for each stage to kind of have what the clients would be doing at the same stage, not in as much detail. So for the project idea, the client contacts you and then employs you employs you for when you have the idea. Exchanging resources during the brief. During the carrying over there and figuring out how the app should be during the design, the clients planning their portion of the app such as like with the Legend of The Lough, planning the routes to match with the apps. In the design, the client might be providing or deciding on content or making the meeting milestones and targets. And the prototype, There's more like just gathering resources as well. And a whole load of client work in the development stage like co-design, data entry, giving feedback and advice, given their own knowledge or in some cases making their own demonstrations to show you what they want. And then in the in the testing stage, obviously the testing giving feedback, maybe co-design from that aspect too. And then for the project delivery, there's the running the launch, giving the App Store details or other stuff needed for publishing. And then in the post project support by communicating bugs and requesting analytics. So I just have a few did did all of that make sense or?

P1:

Yeah, that looks good.

P3:

Yeah, seems to be about it.

P1:

I'm I'm unsure of the carry carry over.

Ethan:

Unsure of carry over. OK.

P1:

The third part there.

Ethan:

So it's like bringing in previous assets like like the reconstruction of the virtual record Treasury, then bringing it forward for the next project, for example, instead of remaking things, there's just like.

P1:

Ah OK.

Ethan:

We've made this, lets use it again sort of.

P1:

Yeah. So if a project is a, if it's a based on a previous project, yeah. OK, cool.

Ethan:

Yeah. Or any. Or if it's something you've made before, and you go Hey, this is useful for this project. Then let's bring that forward. OK, OK. So I just have a few questions. I'd like to just like clarify anything further about the model. So. Um. What's the first one? Sorry.So do you believe this is like [slight pause] an accurate process for how you would go about creating a virtual heritage application.

P1:

Yeah, I think so. It it um. It it works for. Uh. It it tends to work, it's it's a similar process to the. Animation or film production type thing, you know storyboarding, concept or wireframe, storyboard, concept, all that kind of stuff and then production, post production. testing. But yeah it. That all all seems to work very well.

P3:

And maybe other, I don't know. Other companies have different, I dont know, adhere to stricter rules. But it's a I believe it has to be kind of fluid, like it's not one one kind of structure fits all.

P1:

Exactly.

Ethan:

Yeah.

Ethan:

[Web Developer], do you have any um?

P4:

Yeah, no, its at all [pause]. It kind of covers covers most of the different stuff we we do.

Ethan:

OK, cool. So I'm on the right path, [laughs].

P1:

yeah. It's it's kind of hard because, as [Senior Unity Developer] says, every project is different but but generally there is a. um.

Ethan:

Yeah.

P1:

And you probably need some jazzier terms for some of the things.

Ethan:

That's one of my questions as well. Yeah, so so this I just want to hone in on this initial design concept and wireframing, so. Are they? I've got them down as different like, tasks, let's say. To you, is there a distinction between them or do they just sort of like merge into one thing?

P1:

Concept, design, wireframe are all part of the one process and story, storyboarding would be in there as well as a [pause]

Ethan:

As part of the initial, design, concept? [unanswered, I believe].

P1:

So if we were doing a fancy animation. We'd have a concept, design, storyboarding period where we have we come up with the idea. We come up with a visual style. And possibly do a storyboard. Well, we should do a storyboard. And but in an application, you come up with, what, what's the main idea? Uh. Uh. The main concept, what's the main sort of design or sort of the main sort of maybe UX of it? And then? What's the wireframe out of that? Uh, so.

Ethan:

OK.

P1:

So yeah, like what you have there is, is, is cool.

Ethan:

OK, [Senior Unity Developer]. [Web Developer], do you have any more to add about this initial design concept in wireframe split or merge? Or has [Managing / Creative Director] basically got it?

P3:

Like it can be it can be merged, it depends on the project I guess.

Ethan:

Yeah.

P3:

Like some of the stuff, [pause], especially before an application will have to change throughout when when you're doing it and you realise, oh, this doesn't work or whatever. Then it's just. I don't know. I have it at the later stage, but mostly [Managing / Creative Director] just figures it out in a few drawings what what needs to be done or how it should look.

Ethan:

OK. Right. [pause]

P1:

So yeah, it's it's a very, so in our in our case. It's not like we're UM. Our wireframes aren't so detailed that you know. When there's a change that everybody has a freak out it you know, it changes all the way all the time. So it's all very loose basically. It's uh so our wireframes aren't very um detailed

Ethan:

OK. So we did mention about the names. Do you believe that these names are accurate or would you personally like change any of the names or they're like you said, there's a storyboarding stage that you put under the initial design and concept [cuts off] [unsure - technical issues] making more accurate, for example. I can zoom out more so you can see the whole thing if that helps.

P1:

Yeah. [pause] Um. maybe put product-, yeah. Development and production. Rather than designing.

Ethan:

Renaming this. Development and production, OK.

P1:

See, we also have….

Ethan:

Without productions.

P1:

Yeah. Anyway. Well, when we're doing other stuff, when it's more filmy or animation, it's more production post production type thing so. But you kind of have it there. Anyway so.

Ethan:

Yeah, all the videos, website app stuff is under this development umbrella basically.

P1:

Yes. Yeah.

Ethan:

So the tasks would be different depending on if it's a video or an application for example.

P1:

Yeah, and and then the the design part is probably the main design is kind of done then then you're into kind of interface design and stuff like that, which isn't really. It depends what you define design as.

Ethan:

Yeah, it's like so like the. Initial design what the app is going to be, for example.

P1:

Yeah, so. But yeah, it looks good.

Ethan:

[Web Developer], do you think these same sort of questions or anything you think you would change in terms of names or maybe add in or?

P4:

No, I think it kind of. Like name wise I think is all fine to me and like obviously like depending on the project, design could come after development kind of thing, depending on what what we're doing. Like sometimes we'd wire frame up to show the client so they can kind of visualise what we're trying to do and then design could happen at the very end.

P1:

Yeah, so interface design might actually help, so sometimes we'll get [Web Developer] to build it and he'll know what what works best. And then we just, kind of, tart it up at the end with some nice fonts and colours and stuff. Or else. But that's the kind of way that I would work. But [Digital Creative Manager] would be more, you know, here's the design and the wireframe you need to go exactly with that. Which is probably a better way of doing things, but. It it. Our stuff is always changing all the time so. Um. Which? Yeah. Design can come at the beginning or at the end. We're we're talking when I'm my design. I'm talking more about, you know making it look nice.

Ethan:

[Senior Unity Developer], do you have anything you'd change about names or missing stages from your own experiences?

P3:

Well, I think everything we've talked about is in there like.

Ethan:

OK.

P3:

I I believe it's it's fine as it is.

Ethan:

OK, just a few more things to clarify on so. During the interviews there was mentions of prototypes and demos. Do you have a distinction between the two or is it just?

P1:

Well, I I don't. Maybe the guys do. Like we, we like to build stuff early just to test, you know, so that it's not a big surprise at the end if something doesn't work. Um. so it's constant. And then also from a client management point of view. That I'm bringing them on the journey all along, you know. So we're. And that's also why we don't wait for the design either. We want to make sure that it's actually going to work because sometimes we're doing stuff that we haven't. Well, most of the time we're doing stuff we haven't done before so.

P3:

Well then, sometimes the the design might change like two or three times during the whole process. So we can't wait until the design is fully there and also the design might change according to how the app or whatever needs to work.

Ethan:

Do you have any other thoughts on that one, [Web Developer], about what the prototype and demo be the same or like different the distinction or?

P4:

Yeah. Usually. Like, yeah, they're kind of the same. Like, like sometimes I would have multiple kind of multiple versions, just like you know, page 1,2,3,4,5 or version 1,2,3,4,5. That kind of just [with?] different parts working in it in it and someof them and then, you combine it all at the very end [unsure].

Ethan:

OK.

Ethan:

So we mentioned this sort of like cyclical nature earlier on where maybe you have to go back on the design. So. What any are you? Do you see any of these stages like cycling on themselves anymore or more that hasn't been like shown here? [pause and participants thinking] So like we have this design here of it goes back in on itself, the development goes back in on itself, [unsure] Like to understand a bit more about the like that cyclical nature I guess.

P3:

Well, it it might just not stay in the development. So if we see something isn't working and then obviously it's not necessarily only a development phase. So it could be back. Ohh we need [pause] Some other graphics, a different interface for that, and then that needs to be designed up or been made-up in according to the design that has been previously agreed on. So the the circle that goes back might not stay just as a as a coding part, but it could affect other branches. If it makes sense.

Ethan:

OK. Yeah, I think that makes sense.

P3:

But I I think it would get confusing if it just made another circle back to graphics and then it would just be like it's like it's a fluid thing it's not. I don't think it can be bound into one fixed structure and that's it for the for the whole project but it's that's not how how we work. So things need to be adaptable, kind of at all times. And uh. We just keep tweaking until I, don't know, time and budget has run out like two months ago and then we're done, basically. that's something like that I'd say.

Ethan:

So you're saying like? Would you say these cycling backs in like design development the testing? Would you believe they're accurate then? Like going back within the development itself to like?

P3:

No, I think that is accurate. So if if I make a version and then [Managing / Creative Director] tests it out or whatever and other guys or whatever tested it out too. And then we figure out, I don't know, this is working great or this isn't working. We need to do something else to, I don't know, bring the point across. And and it just needs to be adaptive.

Ethan:

Yeah. And then would any of you apply this same like cyclical nature to any of these other steps that don't have any predefined set like cycling in the model of that? [pause] That doesn't make sense, does it? So like any of these stages without the arrow going back in on them. Do you think any of these would be cyclical as well?

P1:

No, it's just within the develop development phase, isn't it?

Ethan:

Yeah. So the development phase has this circling back on itself. So does this design and the testing.

P1:

If we if we go back to the concept stage, then we're in trouble.

Ethan:

OK. So you wouldn't really. Once the concepting is done, then you're sort of you don't cycle back around to it, I guess.

P1:

No, like we might change stuff, but the general idea is there, you know.

Ethan:

Yeah. So that's like a milestone to say so after this bit, you wouldn't really. change it if you could help it, OK.

P1:

Yeah, design, concept, wireframe, storyboard all that thing like [pausing] that's kind of defining. This is what we're doing, now we're going to make it. Um. And if we go off and make it and then they go, no, we actually want something totally different. We're in real trouble there. So the whole thing has broken and but. But within that development production phase, there's loads of cycles and cul de sacs and and roundabouts. Um. [laughs] Um. Mystery tours, so it's yeah. But we we wouldn't really be going back to. The wireframe might change like just in bits, but it's like the main concept is still there, you know.

P3:

No, I think it's. Just like that, yeah.

Ethan:

Just like that, OK. Then just one more question about this. What white pipeline as a whole. So at what point would you say you've got a you've so so you've got your prototype, at what point would that move from prototype into like full design or full development?

P3:

It's just the the prototype is just what we call the first, the first version that runs on something, and then we can say, OK, test it out and then we just keep refining and adding stuff to it until we have all the parts that should go in there in and hopefully not breaking it.

P1:

I mean in theory, in theory we should be using things like. What is it? MPV or whatever or MVP or whatever. [I believe P3 confirms and I think it might be referring to “minimum viable product”] All that kind of stuff for these different phases, but we don't, we just.

P3:

We just wing it, Western style.

P1:

We just have different versions until it's finished OK so.

Ethan:

It's just to, so I'm understanding so you get your prototype, you're working on that to version one. Then you would demo that and then it sort of slide[s] to development from there?

P1:

Yeah, yeah. I mean, in theory, we should be doing, you know, version 1 point whatever. And then do it, you know, have it have it in very defined stages, but. UM. Generally, those demos are made for a client presentation, so we usually meet if it's a six month project, we'll be meeting the client every two weeks or something, or or there be a big presentation each month and I'm generally looking for something to present for that and so, so, but but the [slight pause] the pro-, the final thing is like prototype #12 or something.

Ethan:

OK. So it's like a that's a fuzzy move into development basically?

P1:

Yeah. Yeah, I mean like in theory it would be great if we did have a very. Um. Refined sort of procedure, but it's it's always different and there's always different people working on it who have different ways of working so.

P3:

And the other project actually had interface test 16 as the final scene to build from. So just so you know.

Ethan:

So I think that's all my like questions about clarifying it. So we found that we've sort of worked out that it's accurate, an accurate model with like some modular where, there's the modular nature to the model right within the design coming at the end or the beginning, we worked out with the prototype and demos are where, the where the cyclical nature is. So I'd just like to dive a bit more onto the design, prototyping and the collaboration aspect. So. So I think we've answered this one so. Your version 1.0 sits at the in the prototype stage, right?

P3:

Yeah.

Ethan:

And that's so you have your very first prototype 1.0 and at the prototype stage when it's getting first getting demoed and shown to the client, yeah. […]

Ethan:

So with the designing stage. Does it kind of fit there where I put it? And you said it also has this modular nature, it can slide anywhere else. Um. Where else would you possibly put this designing prototype stage within this model?

P1:

Sorry, can you highlight it on the oh, you have highlighted design and production stage?

Ethan:

Sort of this design stage here I guess. And then this design stage here.

P1:

Oh, sorry.

Ethan:

That's OK. Do you feel they are accurate where they are, but you also said they could possibly slide out anywhere else and move depending on the project.

P1:

Yeah, I think that the, I I can't really read what's underneath design, but if it's all kind of interface and [slight pause] fonts and stuff like that.

Ethan:

Yeah, this is like sketches, early stage testing designing wire frames, basic functionality and stuff like that as well. Depending on the project, that's more like the website development. Like designing assets, making your demo videos like just the general design of the application itself.

P1:

Erm. Yeah, the the a lot of those things are kind of ongoing all the way through, you know?

Ethan:

Yeah. So it's not a single stage, it's it keep it goes on throughout the whole thing.

P1:

Yeah, I suppose you're coming back to that as [[Web Developer] begins talking]

P4:

After testing, we could end up kind of going back to the design stage kind of thing that.

Ethan:

It's not this like it's it's not linear, it's this happening at any given time without the [unsure]

P3:

This is what I mentioned earlier, like when when you do changes you might realise, oh you need to change something to to design or extra graphic elements. So you go back to that stage, but it's nota constant cycle there, with every time you develop like it's not, It's not valid in other [arrow?] basically but you need to, I don't know, dip it else into that, if if a need arises for it basically.

Ethan:

OK. I think that's answered. Unless there anything else you want to mention about where the design about what you feel like the design fits in this model? Is there anything else or do you think you've covered that sort of aspects. I think like you said, it's, you can always go back to it. It can happen after testing, so it's design is sliding. Yeah. Is that what I'm understanding?

P1:

Yeah, yeah

Ethan:

yeah. OK. So we've covered where the version one point so. Version 1 sits the prototype. We know that. So now I just want to touch on your the collaborative side. So in all these orange boxes, I kind of have what the client would be doing at each stage of this pipeline. So. Not just like being in meetings or just seeing screenshots, what tasks they'd be doing. Because this whole mixed reality tool is quite important for collaboration. So I just like to get your opinions on what you think the clients would be doing. In terms of task [unsure].

P3:

Can you zoom into those because it's a bit small.

Ethan:

Oh yeah, of course. I can zoom in some more. So here we have the project idea. [pause due to internet issues?, I think this is my describing what clients should be doing at each stage?] So yes, essentially, what do you think the client would be doing alongside you at this stage in the pipeline?

P1:

Generally just annoying us. Depends on, not.

P3:

But I think it's true.

P1:

It depends on the clients, as some clients might be. So often we've two different clients on a project, so we'll have. The. So for an exhibition we'll have the exhibition designer, but the actual exhibition is for a museum or whatever. So we're we're trying to impress the museum, but also the exhibit-, you know, whereas we're answering to the exhibition designers about it. So there's often two different things. And then often there's [slight pause] If it's a very. um. uh. In cultural heritage, you obviously have, you know, for historical accuracy or or cultural [active - unsure, could be accuracy?] it's like, you know, a poet or something that you make sure that everything is the information is all correct and all that kind of stuff. So um. That you know, they're feeding into that as well, so.

Ethan:

And what sort of stage do you think this? What you've been talking about fits within this pipeline. Where would it lie?

P1:

Again, it's it's all the way through, really. And you probably need to put in. Do you have anywhere there for kind of copywriting script writing and all that or?

Ethan:

That kind of came under design like, sketches and scripting and stuff like that. OK.

P1:

Yeah, so. Um. So you know. From the, say say it's historical accuracy or whatever that you know that's kind of ongoing thread the whole thing and and there's a word side to that and then there's the visual side as well so.

Ethan:

[Web Developer] do you have any-, would you have anything? I can't think of words. I can't think of the right word.

P4:

[I dont think?] have anything to it for on my end anyway.

P1:

So.

Ethan:

OK. In terms of like the clients?

P4:

I I I I avoid, I avoid the clients when when possible.

P1:

They they might, they might will depending on how how they know us, they'll contact [Web Developer] directly for design or like for edits to like, say a timeline or something and stuff like that. And and sometimes it's very much Co designed and then sometimes we sort of bamboozle them of what we've done, where if they've no, sort of, technical kind of, um stuff. So like the client can can be many many different things so. For example, the timelines we just did for [Maastricht?] was sort of co-designed with with them and the ones we did for Trinity as well recently, so. It really depends on the client how much involvement they have on that side.

Ethan:

OK.

Ethan:

[Senior Unity Developer], would you have anything client regarding the client wise where you think these, what they would be doing in these? This question is really awkward. I can't figure how to

word it, sorry.

P3:

Well, normally, the involvement and on my side with the clients is [pause] asking for material, getting new material. Either you know text or voice overs or other bits that are needed to be put in and then also if they get a new version, confirm that they like what they see, what needs to change or what is still missing in their mind, stuff like that. So it's that's most of the conversations I have with the clients.

Ethan:

OK. And where would you say that was like, happening in this pipeline?

P3:

Well, that would be happening obviously at the development stage. So in the in the cycle of sending out a version to the client and getting it back or even before that, just getting the, I don't know the first materials there and most of the time uh that happens in at the moment the pre production or when the designs are being made-up that we get material. But not all the time. Like if if text is agreed out then normally [Managing / Creative Director] needed reads the the first voiceover and then we just use our internal voice until it's it's time to I don't know, nail it out, nail it down and it's all signed off and then it goes to a to the voiceover artists and he just talks those lines.

Ethan:

OK. I think that one's that so for the next chunk I just wanna. Um. Basically, present a couple of app concepts for a mixed reality collaborative cultural heritage authoring application, so I have three quick ones to go through and it might be helpful. I should have mentioned this earlier, if you wanna grab like a Word document and take some notes, if that's any help, because we'll have a discussion about these concepts as well. And hopefully this bit I can explain a little easier. [laughs] Ohh whoops, just refreshed it. Come back. OK. So I'll so to start with. So my first concept is [under breath] go away. So my first concept is essentially a. It's yourself as a developer and the client working together on an application within a mixed reality environment. So say I have this room, you would join the client in a mixed reality space, see their layout to jointly develop this application so the client would act as the host and then so you would get there like think it's point, I think it's called Point Cloud so you can see what their environments like. And ideally, each participant would have a headset so everyone could participate within the [mixed] reality and properly contribute. So yourself and the client would go through and build out, say, a virtual exhibition. Sort of like a rough with like a rough level builder making a rough rough prototype developed in the application and then you would take what is developed in this application, export it out as like a JSON or something and then do the final polishing because , as it's an authoring tool, you can't do all the programming within the application. There be some bits and pieces you'd have to take it out and do within unity. And so and. Before pulling it out to finalise,, there'll be this stage, like cyclical stage of like going back into the app, viewing changes made from both sides. Like making the annotations for like this should look like this or I want this functionality. So in terms of like the basic functionality of the app, both parties joining that mixed space with the partners that host both parties will have a basic pack of environment assests such as like portrait or a pedestal, that they can place down, it's very simple level building system. As well, there's a very, very like another basic rudimentary programming systems such like a drag and drop system. So you can make some very simple functionality like. If this then that for example. Um. it's not gonna be an all-encompassing system, for example, so it'd be very very basic functionality to have the client get involved with the prototyping process. Then outside the environment, we could you could have yourselves uploading your own models. Like like in the CCT as an asset under than tracking that in. So you can put your own models like rough 3D scans of the next of an object that wants to be exhibited or images something like that as well as annotation system. So both parties can take notes and leave like sticky notes in the environment. As well as saving and loading functionality so you can come back and revisit these. Their prototype exhibitions while you're developing it and then exporting it so you could take out a JSON into unity and have it like build out the prototype and then make the extra changes. It's sorta best described in this diagram down here, where Noho and the client are working with the app at the same time. Does that concept make sense?

P1:

Yeah, yeah, yeah, it does. Yeah. Um I mean it'd be for a very very virtual worldy type project, yeah?

Ethan:

Yeah

P1:

Yeah.

Ethan:

Yeah, well, it can be either virtual world or like prototyping a physical exhibition and then you don't finish the prototype up, for example, sort of.

P1:

Yes.

Yeah. No, it's [nice?].

Ethan:

And then the [pause] The second concept is more of a client led concept. So in this concept, the client is like the lead, takes the lead as the prototyper [so like] like they all they're all a mixed reality system. So they enter their room of mixed reality and they can do the same level builder like placing basic environment models around. As well as having access to some third party repository again like the CCT or sorry the CMS, sorry to have their own images of their of their artefacts put in. So they can really visualise the environment and make like a basically trying like a white box out an application somewhat themselves. And this one, they wouldn't have any like programming functionality. They'd have more and they still have an annotation system. So they could say I want this stuff like this if they can't complete that functionality within the app. Then, once they have their prototype, you would join in mixed reality to view it, give feedback, other ideas. They'd make some changes there as well. And then carry on with cyclical nature. Once the client's happy with what the prototype is [fumbles] once the client is happy with the prototype in the app, you would take it, finalise it and then present it back to them again as a finished piece. There's a lot of like similar. Functionality of mixed reality. Having generic models to build out something. Bringing in their own images. You being able to visit and like see what they want from their perspective. Adding annotation then again save and loading and exporting. And in terms of this image, I hope this is quite explanatory where the client that goes into the, app does what they want to do. And then does their like iterative loop and then passes what's in the app onto you to finalise. And then the third concept is kind of the same as concept 2, but in reverse where you would make the prototype within the app to present to them. So they can come in and have a virtual tour of your space, for example, the space that you've designed for them, leave their notes and then you would go back and do more iterations until they're happy with that prototype. And you'd have like this, more like a full suite of programming tools. Probably still quite simple, just quick drag and drop to rough out prototypes. And then. Like a level building pack and probably more out of the CM- more out of your, like like these. Sorry, just one second. I swear, I was better explaining this before. [laughs] So yeah, you could upload more stuff to like your content management system and sample to drag in to show to the client. And then once the client's happy with the prototype and then you take it back out, finalise it and then present that to the client. So if it's kind of the opposite of the client led one. So the functionality would be like a simple level building to let you place models or build out the room. You may might probably have to meet with them in the environment first to get the point cloud so you know what their space is like so you can effectively build out. Annotation system. It's very important for three of these so everyone can leave their own notes. Potentially a versioning system, because I would imagine you'd want to show different versions of a of a piece so you could hop between like version 1, 2, or 3. And then as before, a saving and loading system as well. [mumbling under breath]. Did those concepts make sense as I was explaining, was there any clarifications?

P3:

Yes, could could you, could you give me the difference between 1 and 3?

Ethan:

And then #3 is you are the primary developer and then you bring in the clients to view essentially. So it be similar to what you do with showing videos over to over zoom or Skype or Vimeo. It's like a live demonstration of what you've got. Or at least a very close version until you have to export out and finalise essentially.

P1:

Yeah, that's cool. You'd. I think concept 2 um for 99% of our clients wouldn't work because the the wouldn't be technical, um. I can. I can think of one, one or two museums that might might be good at it, but. Um. [pause] It requires, yeah, just from a technical, you know that they'd be doing all sorts of stuff that would just wouldn't work.

Ethan:

So yeah, leading off from that. I'd like to get all your, like, what do you think are the positive and negatives of these concepts, of like each one. Like you mentioned, this is probably too technical for [pause] your most clients, but how do you feel about the positives of the other two and negatives overall.

P3:

Well, I think the third one is easiest to implement because we just have the most knowledge about how things work in the technical side of things in 3D and environments so, um, I have a feeling that number one, where the client has too much [pause], I don't know, can do too many things. it might lead us astray, if they're just like it it might be more focused if just tell us what they want, and we do it rather than they try to figure it out, with us being present, like obviously that's going to be time consuming.

Ethan:

Sorry. So you're saying if you're trying to explain to them how to do something while you're trying to prototype?

P3:

Exactly […Distraction…] Yeah, sorry. No but basically. I I believe that the first approach we're both trying to do this simultaneously, is gonna be wasting a lot of time where you can't focus on doing stuff. It's like. um. Sometimes in a very big project you have to go through a lot of meetings. And whether actually trying to build and develop something and all these meetings take away the time that you need to build it. And then there's another meeting going on where you say, so what's the progress and you kind of have to go well, we had eight hour meetings, so, and there's the time and it's gone.

Ethan:

Yeah.

P3:

And I feel with the first approach that's a risk that is is [bound] to happen that you're wasting a lot of time trying to accomplish something, It would take you half the time if you did it yourself.

Ethan:

OK, OK.

P3:

If that makes sense like it, it sounds linguistically, probably but.

Ethan:

Yeah, that makes sense, yeah.

P3:

I don't know.

Ethan:

Yeah. No,I know I get what you mean?

P3: Yeah

Ethan:

[Web Developer] Have you got any thoughts about these concepts? Positive negatives or?

P4:

Yeah. Yeah. Well, like, say, for for me. And what I do. Concept two would be a no because the client would want you know, stuff that we would need a supercomputer to run and stuff. No, no way that's happening. Uh. 3 3 obviously would be the best, with then, kind of, [pause] bringing in part of 1 into 3 if that, like. For me, obviously, kind of, [pause]. You can kind of like. We can bring in stuff where, You know, we can, we can sit on a screen and the client can say move move this text up 10 pixels. Move this one down 10 pixels. That kind of thing.

Ethan:

Yeah.

P4:

And kind of like part of one would work well, kind of after so many iterations of concept three. You can then kind of bring the client in, to just kind of tweak things like that a little bit more.

Ethan:

OK, I hadn't thought of that one either.

P1:

But I think [Web Developer], if if you were thinking of the virtual well thing, you know we could have met the guys in the space and and pointed at things and saying well over here, we're going to have this [pause] musical instrument and over there is going to be.

P4:

Yeah, I'm more kind of thing of the kind of the the web and kind of the stuff, the kind of the design tweaks we do at the very end, kind of.

P1:

Yeah, I think this is much more for the sort of conceptual phase, isn't it? And there's much more blocking stuff out rather than detailed stuff, yeah?

Ethan:

Yeah, if you wanted to like, prototype out and then once the client's happy, then you would go to unity for example or whatever, Babylon whatever you want to use. So. What do you think any potential use cases of these concepts would be?

P1:

Yeah, I suppose uh if we were doing [pause] if we were involved in the spatial side of the exhibition as well. It would be very handy, you know to say, well over here, we're going to have a big projection. And over here we're going to have whatever. Um and then if we're creating a virtual space, it would be very handy to say well, we're going to have [pause] timeline here and then that's connected to the 3D model over there and blah blah blah so. Um. Sort of, I suppose what it is is a presentation, but you're you're both in the same environment. You're walking around the environment rather than, showing it on the screen. So, uh, getting headsets on to clients is always a nightmare [laughs]. So I suppose this is more. this is more, you know um, aspirational that client would be a bit more 3D [pause] educated, yeah? It's it's a. It's a nice idea though.

Ethan:

OK. [Senior Unity Developer], have you got any thoughts about potential use cases for these concepts or?

P3:

Well, mostly when. Yeah, obviously for for exhibition design. With stuff that isn't happening in the room like we have these apps that you know, run along a trail. Like I don't see it being used for that because given that it's outdoor, the space is too big to to do anything that the the apps would do. Something different that I can't see being collaborated in a way like that, but for doing a an internal museum exhibition. Yeah, that that could be useful to to arrange stuff like that.

Ethan:

OK.

P1:

Well, well, you could simulate the AR stuff within within that space, if you know what I mean. So you're standing beside the client pPointing that out [pause] Finn Mccool as a giant. Or.

P3:

Hmm. I'm just thinking how much of a nightmare programming the [Ethan, P1, P3, P4 laughing] rather than than making the app and saying here try it out

P1:

[This is all, this is...]

P3:

on your phone. Um.

P1:

So I yeah, I I think it would be cool for virtual museums where we have, um [pause] You know, we have an environment like the virtual record treasure or something where we where we can walk around and point at stuff and you know with, we're going to put something here or when you.

Ethan:

Yeah.

P1:

Then we jump over here and or if we were doing a new build of, so I was just quoting on a pris- uh. the jail , down in Nina so say we're recreating this jail and we'll say will there be a story in this cell here, And then when we go out onto this area, then we'll put a different, you know, maybe you talk to a character here or you interact with the electric chair or whatever it is, and so.

P3:

That's quite macabre.

[…]

P1:

But yeah, I do I do like the idea that you're actually with them in the 3D Environment, I mean, we're always trying to get them to, to make things more virtual and 3D. So it would help if they actually came into the environment with us.

Ethan:

Do you think that this would be helpful for designing a culture heritage application, these concepts? Any of them?

P1:

It all depends on the client. It would be good from an educational point of view for the client. As to what [pause] the spatial side of things. Um.

P3:

Also, they might appreciate how much work it is to do this stuff [Ethan laughs]

P1:

Um.

P4:

Because we we had earlier projects before where we've installed stuff and then, the client realised, you know, children aren't giants. They can't reach the buttons that are up the top of the screen and we've had to go back and for accessibility reasons, then redesign stuff to move all the buttons lower on the screen, that kind of thing, because they can't go and take a screen off the wall and move it down lower, all that kind of stuff.

P1:

Yeah.

P4:

So being able to actual conceptualise it and show the client [not?] like this stuff needs to be lower or whatever would be what what would have save [laughs] would have saved us a lot of [unintelligible]

P1:

Yeah, I could. I could see it also being used in terms of hardware as well. So like, me saying. [um] You have a. [pause] You have a touch screen in a [pause] with a huge big skylight over it, you're not going to see anything on the touch screen because of the reflections, and then they ignore that and then when it's installed, they go, oh, there's a big reflection. Yeah. Yeah. I told you that. Can you make it? Can you make it brighter? No.

Ethan:

What about in terms of prototyping a culture heritage application? Do you think any of these would be useful for that?

P1:

It depends what what you're showing them within that space, [I suppose]. Like if it's. [pause] uh. How something works. Um. I'm trying to think of an example, so let's take the virtual well. So we did this virtual well thing which is like a [slight pause] wellness type thing, but it's more religious than that. But anyway, the [pause] um [pause] The functionality it's it's very hard to show someone the functionality like you're just standing there looking at [pause] In this space anyway, it's it would be more. I think it'd be more useful for just spatial stuff, you know, saying this is.Um and this is where things are going or this is the scale of different things. And um this is how it works um.Oh

Ethan:

OK. [Senior Unity Developer], have you got anything about any thoughts about using this as a prototype using any of these concepts as a prototyping application?

P3:

For for other development other than exhibition design and stuff like that, you mean?

Ethan:

Oh sorry, so prototyping a cultural heritage application using one of these using these concepts.

P3:

Well, in in part like. Obviously you mentioned it that it's being in a in a mixed reality environment. If you if you leave it at that, then the collaboration still stands with the client like you still need to figure out the stuff. It's just not necessarily in a in an Mr environment, it's just, I don't know, in person or in the Skype call or figuring things out like that, or like [Web Developer] mentioned, there might be a Skype pro which just share your screen and then they go, Oh yeah, we need this to be a bit bigger. And can you move it over there and that kind of collaboration has worked before for, for years on our side and sometimes is the easiest and quickest way to deal with [stuff]. Um. like for for general development, I'm not sure I see the advantage of having it in a mixed reality environment, but for specific cases where we actually deal with the virtual environment anyway, it might be beneficial.

P1:

Something like what you were doing first, Nathan on the oh err Ethan on the the ,you know, where you have the gallery thing where you're you're throwing in. I mean, I could see that working, but I don't know what use case you would have a client except for maybe my wife who runs a gallery, where you go ,you know, you decide where you want everything in that space, and then they go and [slight pause] And do that.

Ethan:

Do you think any your clients might find any of these concepts to be useful?

P1:

I think only in a spatial way you know if they really want to get a sense of the space. So in designing a space, whether it's virtual or real or a like a a twin of of a real space. Um. [pause] I think.

Ethan:

They so just like, like you said, the spatial part. OK.

Ethan:

[Web Developer], do you have any thoughts about, if any, if you think clients might find this useful from the experience?

P4:

Not not that I can. [Sorry?] not that I can think of at the moment, no.

Ethan:

OK. So. So a couple more questions. So say you have these concepts and apps, where do you imagine you would stop using the app and then transition to like unity for example?

P3:

Sorry sorry, can you say that again?

Ethan:

No, sorry, it's yeah. So we have these. So for these concepts, at what point do you think you'd stop using them and move on to unity for example?

P3:

Well, well, first of all, I'd have to develop that concept in unity first to be able to share with the client.

Ethan:

Oh, sorry, sorry for the uh for the concepts I presented. When would you say you had these applications? At what point would you stop using the applications I've developed and then moving on to like unity or?

P3:

Well when it comes to [pause] we're no longer using a placeholder object or whatever. We need the real, the real objects or properly rendered, I need to generate, you know, baked lighting and stuff like that. So when it comes to that, then we have to jump out of it anyway.

Ethan:

OK. [Web Developer] do you have any thoughts about when you when you think you've stopped using the application these concepts or?

P4:

No, no. [pause] Not for me, no, not not really.

Ethan:

OK. [Managing / Creative Director], have you got any- Oh sorry. Carry on.

P4:

I'm done.

Ethan:

You're done, OK. [Managing / Creative Director], if you got any thoughts about when you envision these concepts being like, stopped being used within your pipeline?

P1:

I think well, I suppose. Uh. Um. [pause]

Yeah, I think once you've defined where where things are going, I mean it's it's very hard to know [slight pause] depending on the project. So um, but yeah, I mean, if if it's an application that that is just used for designing, then you'd want to be out of it, you know, very early in the stage. So that there's plenty of time to ake it happen

Ethan:

OK

P1:

So it's it's very hard to know what I what I'd have actual use case.

Ethan:

And what sort of interactions do you would you think would you want within these app concepts so like visitor interactions versus prototyping interactions. So if I can give an example so stuff like prototyping interactions are like picking things up and moving them around in the space, whereas visiting interactions are like like the things an end user would do within the exhibition. What sort of um interactions do you think? That doesn't make sense. Does that makes sense?

P1:

Yeah. Yeah, no, I understand. Um. Uh. So. So you've kind of authoring interactions and then your user interactions. So Um well you'd need, you'd need both because you know the authoring side where you're moving or creating something within the space um you really so say there is a like a [pause] uh. Some sort of game within it where you have to. Um. [Pause] Move a timeline across a a thing or something like a move a a button across or something and you want to explain that to the client to yeah. You'd obviously want that to be to be working within it if possible, but but then you're probably developing, developing stuff just for an environment that you're actually not going to use it in, so I I don't know, it might be a waste of time. But definitely we need the kind of authoring and stuff of moving stuff around, changing colours, changing lights, stuff like that.

Ethan:

[Senior Unity Developer] What sort of interactions would you want like? Same question basically. what are your thoughts?

P3:

Yeah, I'd say for the authoring, but for the interaction, [slight pause] in the virtual environment, I'm not sure, it will be feasible to to try to cram it into the authoring application. [slight pause] Because at that stage you'd have to go into unity anyway to make it and then to go back and bring it into the authoring. It might be too much work.

Ethan:

OK. [Web Developer], have you got any thoughts on these interact types of interactions as well or?

P4:

[Garbled - being able to?] Like my like for my kind of work, if you're able to load in external assets, that kind of thing that. like if I if I have something up on a web page that you can load load that in, In a in a box to kind of, like, simulate here's the touch screen kind of thing and that kind of interaction, that kind of thing would be, I guess, handy.

P1:

Yeah. So if you have, if you have like a box on the or pedestal, and on on that thing is a screen that is showing um a URL of something [Web Developer] has developed and you can interact with it like click on it that would that would open up a whole [slight pause] the whole web development side of it, you know, so.

Ethan:

Yeah. And how would you feel if, so I think we talked about if you wanted the full user interactions, you probably have to come out of the application anyway to show it. So how would you feel if in these concepts that they're prototyping interactions were implemented but for the visitor eh visitor interaction, It's just like an annotation to say it should do this for example? How do you feel about, like sticky like sticky notes saying when I click this, this should happen as opposed to having the actual like click interaction implemented.

P1:

Yeah, I think sticky notes would be good in the absence of of something working. Um. Or. Or. Or or video or something. Yeah, I I think it would actually be, very thinking about it again, what we were saying there about [Web Developer] having that that web aspect in there [slight pause] usable.

Ethan:

OK.

P1:

Because then then you can have every every app that [Web Developer] has ever developed would be accessible within there. Do you know what I mean?

Ethan:

Yeah, I know what you mean. [Web Developer] , you got any other, do you have anything about this like in annotation versus having the actual interactions and same question, kind of? So I get everyone's like opinion on these notes, sticky notes.

P4:

Yeah, no, annotations would be kind of [slight pause] handy to kind of keep like, just keep track of kind of [pause] change, changes or what they want to do, kind of thing. Similar to similar to how Miro is itself kind of thing, that clients can just add a kind of this should do that, or even for even for bug reporting handy as well.

Ethan:

Yeah.

P3:

Well, I I don't mind the annotation idea, like it's it's good to have it there. However, like we already have [slight pause] systems in place to [slight pause] to do these sticky notes like we sometimes have it in in Miro board where it's just a series of screenshots and then you can comment on so this needs to go there or this needs to change or this needs to something else. Um. which might be faster? Well, if it if you are in the virtual environment anyway, then it's good to have. But if you're out of that stage, then, there's no point, I guess, going back into that stage just for a sticky note.

Ethan:

OK.

Ethan:

And speaking of these annotations, how would you personally like the annotations to be presented? Or how would you do? How would you want annotations done basically? Would you want this sticky note with writing on it or some other kind of system? Or what are your thoughts on how an annotation system in a mixed reality environment would work?

P3:

Well, it should probably be like an item. And then when you click on it, it throws out the little box with the text that's meant to be there. Or if it's recorded, it just plays the audio file. If you want, don't know voice over and notation just say move this to the right and then you just place an audio clip. Uhm. That will be my approach.

P1:

You could also [Senior Unity Developer] could put in one of his AI bots in there and you could just ask. What? What did the clients?

P3:

And which we just make it a grumpy AI. Can we move this to the side? No, \*\*\*\* off.

<Focus Group Complete>