

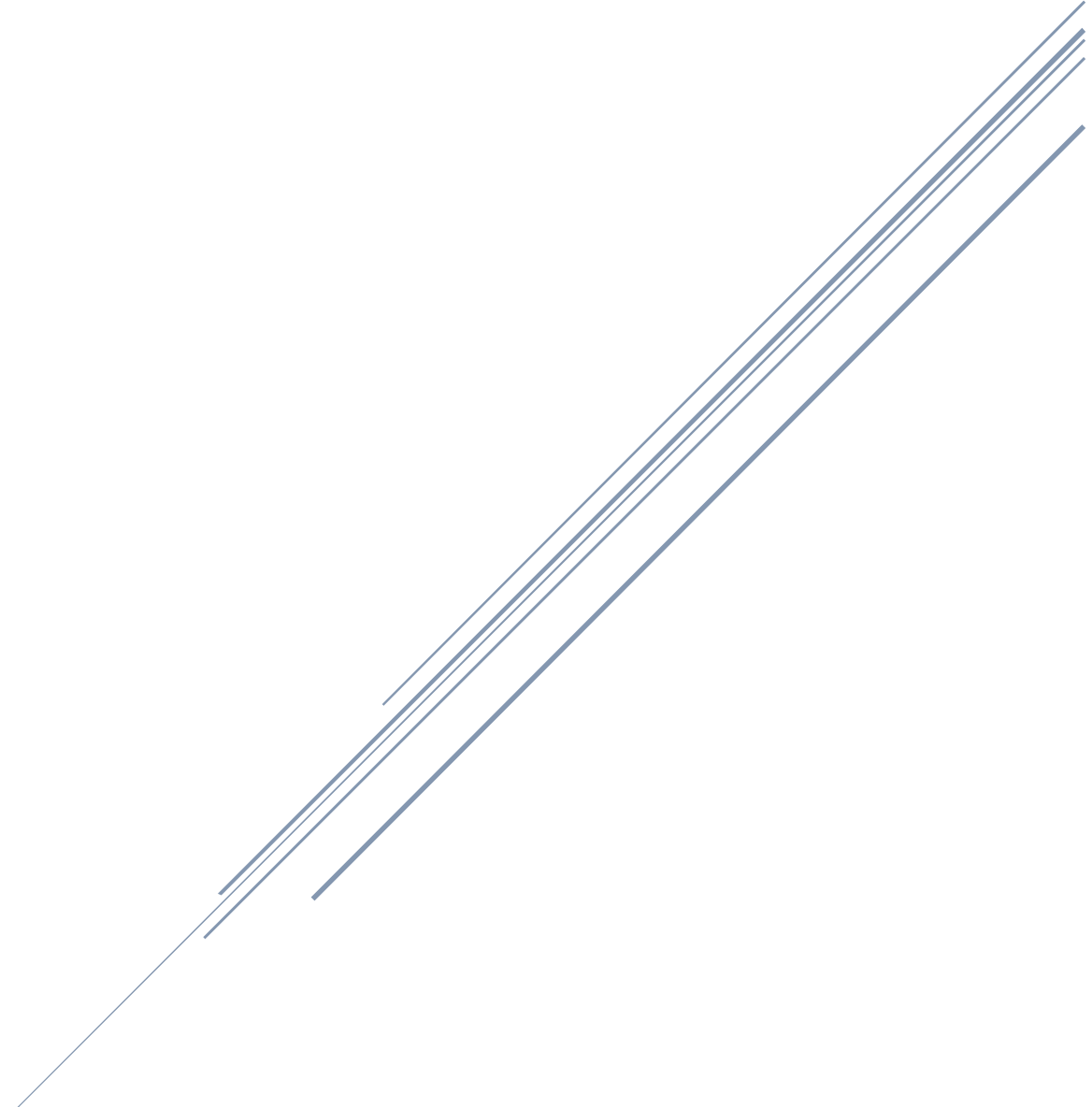
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D_E2b Development - Instrument – Essay

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Introduction

When thinking about a project to create and design for this assignment, I wanted to create something that I, myself, as a recording artist would use immediately. A tool I would use for my own promotion, and career. I also wanted to think of something out of the box and somewhat innovative.

Ideas

I made a list of concepts and Ideas which I will list below:

1. Hearing the sound as it's being drawn or painted, to go alongside the performer on stage using conductive ink or paint.

I love live art and hope to one day perform with a live band and live painting artist on stage behind me. I think it would give my live show an extra dimension.

Why I decided against it.

This is a cool idea, which I would still like to explore eventually, however what made me decide against it was, the timescale I had to create this project and also the budget I had towards it. Plus, I discovered that conductive ink would not work in a live setting because it's not conductive until it dries which takes 5 to 10 Minutes according to Bare Conductive. *A small drawing on a piece of paper should dry within 5-10 minutes in optimal conditions.* (BareConductiveFAQ, 2019)

2. A phone case that can be doubled up as a keyboard or drum pad, then bluetooth linked to music creation app like Maschine or GarageBand. It would have Mini keys (Roli style) or 4-6 touch sensitive drum pads (Maschine style) for people on the go, on the move, travelling musician. Here are some photos of existing products which have elements I would use in this idea.



Why I decided against it.

A good concept, again, one which I'd like to explore, but the materials would cost too much to make a prototype and I would also need to hire a designer or partner with a company like Roli or Native Instruments to make the product at an affordable price and premium feel for the end user..

3. A Mood Lamp that Lights up and makes ambient mood/Texture- Plasma ball

To do this I would have had to Hack a Lamp. Take apart an Ikea Lamp and hack it so that it makes sounds when it's touched.



^{iv} I thought this would add a nostalgic and fun element to music. I remember this toy from my childhood and also trips to the science museum. The sound it would produce, is an electric buzzing sound.

However, the reason why this wouldn't work for this project is because my knowledge of hacking and soldering is very basic. Following advice from my lecturer and my own research I would need a higher level or expertise to carry this out successfully.

4. A wearable / adapted hat (fedora or snapback). Strings or synth or fx trigger, as you touch the rim, tap it or take it off. (good for dancers and performers like Ne Yo or Michael Jackson)



v



vi

This could work using conductive thread, but and potentially a proximity sensor too. I disregarded this idea for now, because I think I would need more time to learn the skills required and plan it logistically, and also expertise of sewing using conductive thread.

The Idea I Chose.

I decided to go with an '**Interactive Promotional Flyer**' because it's something I can easily make and will be able to market. Which I'll explain more about below.

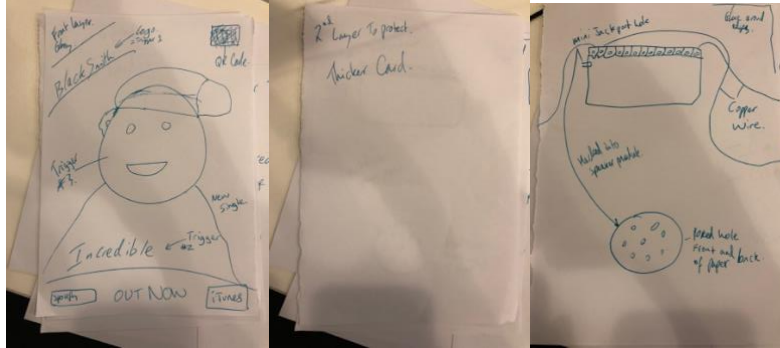
This video from of an Interactive Drum Poster' by Dr Kate stone was my initial inspiration. Please find a link to a demonstration of it being used in the Appendix. ^{vii}

Design Options and Pitfalls I came up against.

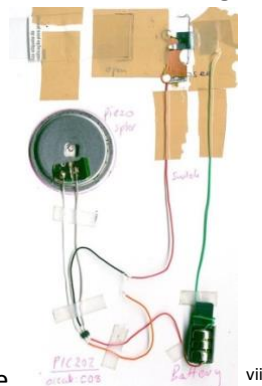
Here are some design concepts I came up with when designing the Flyer.

Design option 1

Here are a few mockup photos I took of the plan



Replicating a birthday card but without the opening. My plan was to punch speaker holes on the back and holes on the bottom for the music clips to play out of. Here is a diagram I found of a homemade diy,



inside of a birthday card using a Slide Tongue Module

To make it, I would use 3 pieces of card stuck on top of each other...

1 glossy for the front and the other 2 normal paper. I would attach the touch board to the back paper, at the top and a small piezo speaker at the bottom. This would be sealed with a second piece of paper on top. Then a third piece would show the design of the flyer.

Why this wouldn't work

I discovered that greeting cards use slide tongue modules. So that when you open the card the song plays. With slide tongue modules there needs to be some movement for it to work, which is not what I was going for.

I discovered that conductive ink does not work around corners, so the design would have to use copper tape which would let down the design and look of the promotional piece, and also give it a cheaper look.

Also, if I was going to stick to a single flyer design, I would need a speaker that fits in-between 2 a5

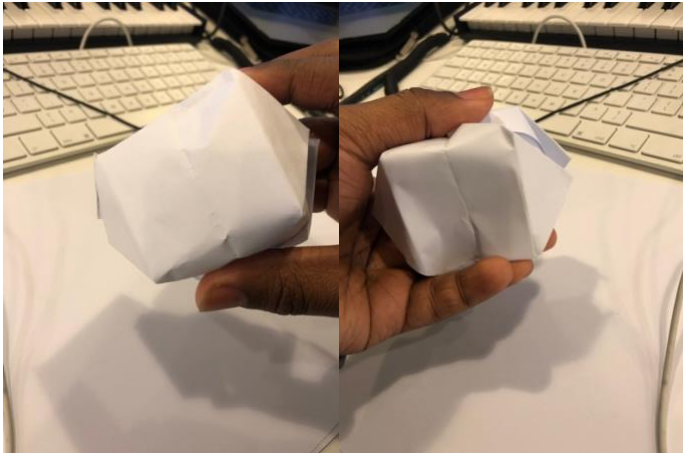


sheets of paper e.g. a Piezo speaker like in birthday cards

Design option 2 – An Interactive Cube

Another Idea I had was for a design, was to make an interactive cube. Each panel side would have a different image of the artist on it. When you press on a side it will play a sound clip.

Here are some photos of an origami mock-up I made.



A cube with 6 Sides would give me more image space for the artists imagery.

For it to be an all-in-one unit, a speaker would need go in the middle of the cube.

Another way the sound could be played out, is you could connect a headphone port to the inside cube.

The third way I thought to output the sound, was through a Bluetooth wireless connection.

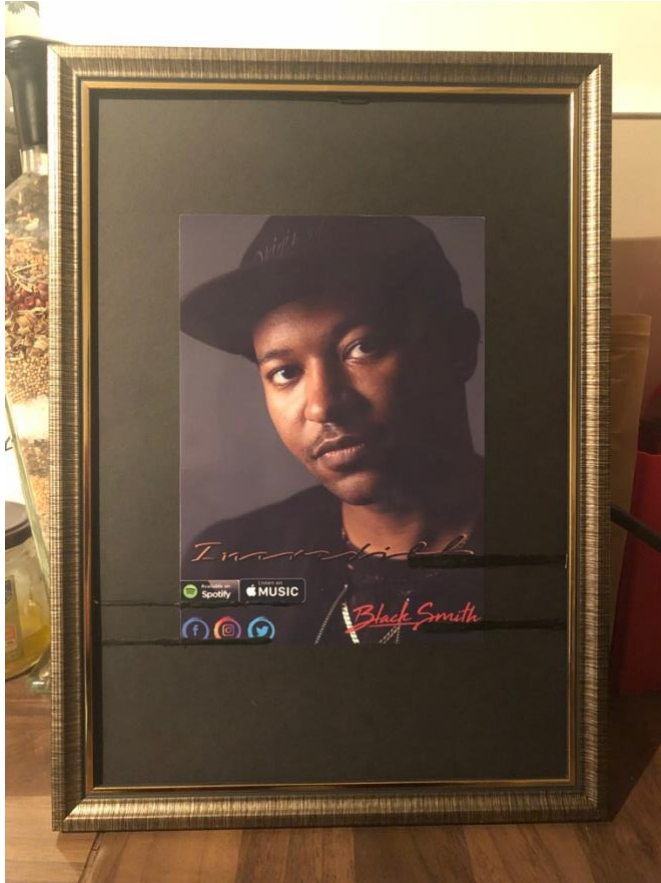
The reason I decided against this idea is because I struggled to figure out where the touchboard would go. If I was to use a circuit board or Arduino style board, it would have to be quite a large cube. More time than I have, would need to go into developing this, but it's still a cool idea which I'd like to explore in the future once my knowledge in technology and making has increased.

The Final Design

‘Interactive Promotional Flyer/Poster’

Here is a photo of the final design of the prototype I submitted.

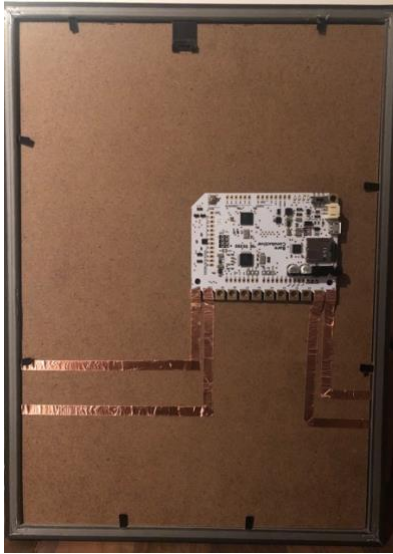
Front



Back



Circuit



Artists have the right to set their own boundaries and choose their own suite of technological tools for managing fan relationships, based on their own creative and financial goals—and platforms should arguably facilitate, rather than discourage, this autonomy. (Hu, 2018)

This is a promotional tool for Artists, and an interactive flyer for fans. I see this project as not just a flyer, but an experience which I'll talk more about later in this writing.

How it works

- The recorded audio/sounds are pre-loaded onto the SD card which is slotted inside the touch board.
- The touch board can either be powered by a computer or in my case an external power charger.
- I then printed the flyer design onto a5 paper, and stuck the flyer onto an a4 sheet of black card. This was to give it a nice solid base for presentation, and so it can be transported okay without being damaged.
- This was put inside a frame for sleek presentation.
- Because the paper itself is not conductive, there needs to be something conductive on the trigger button so that when it's pressed it completes the circuit.

For this I made a line of conductive paint underneath the logo/icon I wanted to trigger a sound. I then led this to the almost the edge of the card. I taped copper tape, to connect with the ink, and led it around the corner in a trail to the relevant conductive pin on the touchboard.

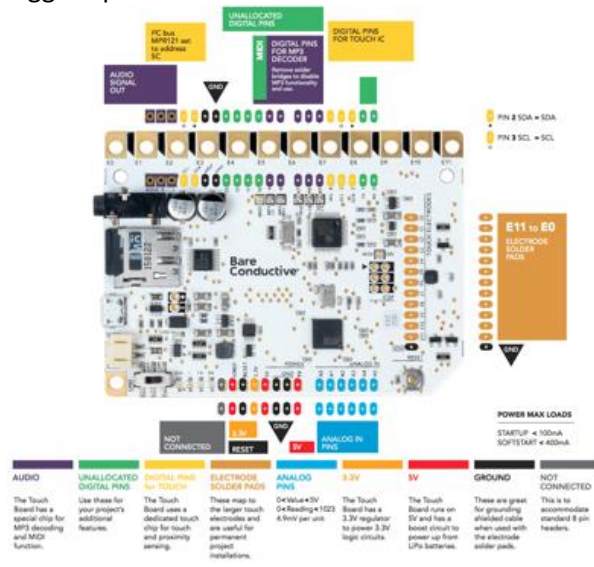
- When a fan presses anywhere on the conductive ink trail, the connection is triggered and audio is played.

Equipment I've use to make this Prototype

- Bare Conductive Touchboard (Powered by a 5v portable battery charger)
- Bare Conductive Paint
- Copper Tape
- A4 Sheet of Black Card
- An A4 Frame
- Glue

My instrument is, a flyer that plays a clip of audio when a fan presses on certain areas of the flyer. The Bare Conductive Touchboard is the centerpiece to my project. The main tool that brings my idea to life.

To keep things simple, I decided to only have 4 hotspots, however the touch board does allow you to trigger up to 12 sounds.



(Meyer, 2017)

I used this starter guide to get me familiarised with Bare conductive touchboards (See Appendix for link)

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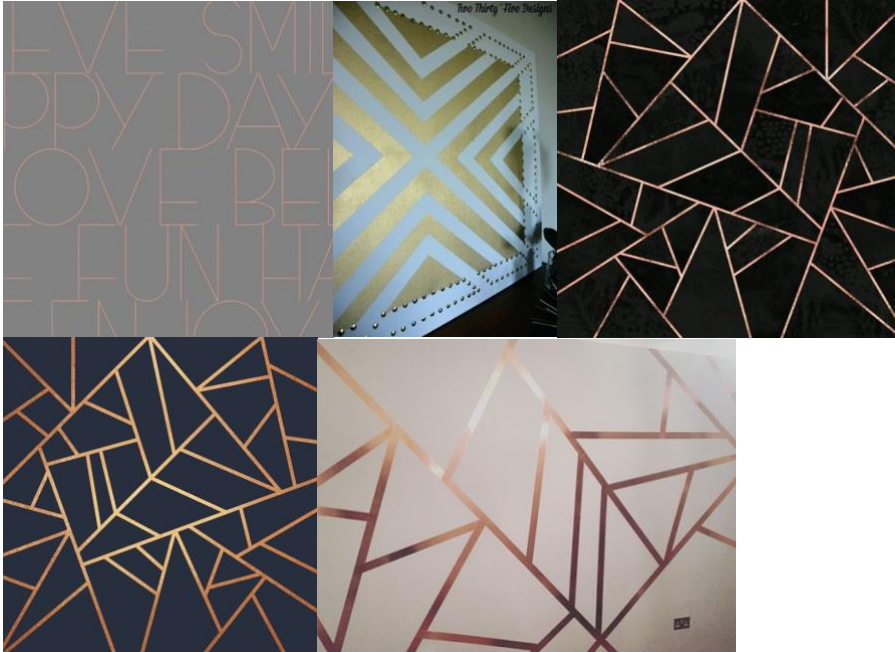
Trigger points on my flyer.

- Listen on Spotify & Apple Music Icons
- Facebook/Instagram/Twitter Icons
- Incredible Logo
- BlackSmith Artist Logo

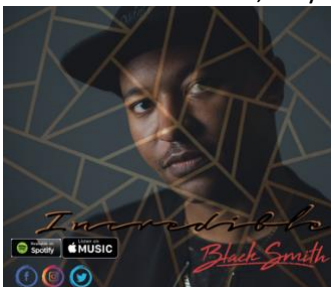
Design Concepts

At first, I was going to use copper tape as my conductor. So I wanted to use make a design that would look nice but also keep the aesthetic of the picture and product I'm promoting and was also still conductive.

Here were some of my ideas and designs when trying to design the flyer.



Using the website Canva.com, I layered a gold and blue wire design to go over my promo flyer.

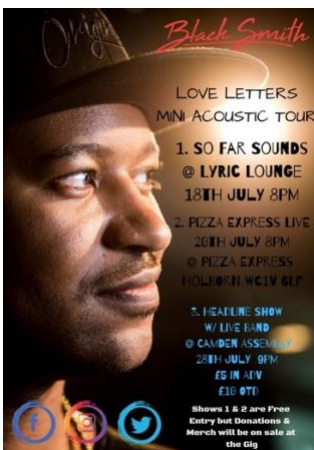


Then I printed the promo picture without the gold layer and manually stuck the copper tape ontop of it. Here is a picture of that.



I didn't use this as the final design because I don't think it looked good as a flyer. I also tried wrapping the icons in copper tape and foil, but I did not think this looked nice either.

Here is another flyer I designed but did not use because, it was hard to choose the trigger point areas, and also the colours in the flyer would make the black conductive paint hard to see.



What influenced me to make this project?

My project is heavily influenced by the works of Dr Kate Stone.

She started in the technology industry in 2006, and has gone on to make many innovative products and designs.

Here is her 'Drum Poster' which is on sale on her website for £39.00



Here is an excerpt from the Product description on her website.

The interactive drum poster allows you to drum along to your favourite song just by tapping the drum kit graphic on the poster. Sound is produced using a surface mounted actuator and the poster runs off 3 AA batteries, not included. (Novalia, 2019)

In 2013 she led a TED Talk, talking about her DJ Decks made out of paper, and also her Drum Poster. (TED, 2013) For her designs she prints onto normal paper using her own conductive ink, and combines it with a microchip which she says uses, Capacitive touch software (so it knows where it's been touched) and Wireless software, (so it can be connected to Bluetooth headphones and other wireless processes)

The Drum poster which she demonstrates in the Ted Talk, connects wirelessly to an app, she made for the iphone. The iphone is then connected to a speaker which outputs the sound when the poster is pressed. She has different sound triggers for the separate parts e.g Kick Drum, Snare, Hi Hat etc.

Another product she talks about in the TED talk is a newspaper she made for a university, using her printed ink technique, however the user could connect to it wirelessly and hear the music or reading of the article which related to what page they were looking at.

She also had trigger points set up, for example a facebook like button or a vote in a poll.

Msp 430 & Arduino are both Micro controllers she could have used in her works.

Arduino is an open-source electronics platform based on easy-to-use hardware and software. It's intended for anyone making interactive projects. (Arduino, 2019)

According to her business website Novalia, Dr Stone has over 100 registered Patents. ^{xii}

Other Similar Products in Using Interactive Music Technology.

According to her business website Novalia, Dr Stone has over 100 registered Patents. ^{xiii}

Dr Kate said, “In simple terms each product has a microchip built in, which has to be programmed, with new software written each time”. ^{xiv}

Here are a few more examples of Dr Stones commissions, which shows me the possibility of collaboration across industries and working with different global brands.

McDonalds: MC TRax – A partnership with McDonalds, TBWA/Neboko^{xv} and This Page^{xvi}, they created and also a link to a promo video which I found on youtube which can be found in my appendix^{xvii}

The McTrax project utilised Novalia’s conductive ink technology to create a paper placemat with integrated bluetooth connectivity, turning diners’ trays into full music production stations. (Novalia.co.uk, 2019)



(Novalia.co.uk, 2019)

DJ QBERT: INTERACTIVE DJ DECKS

Here are photos taken from the Novalia website of the work.



And a link to the promo video can be found in the appendix. ^{xviii}

In both of these examples, the customer's smartphone is required, and Bluetooth to connect and interact with the product. I would love to remove the iPhone from the equation in my products and have it all in one. The flyer/poster may have to be slightly thicker, but it would have a built-in speaker, so it could be interacted with, played and experienced there and then.

In an interview, Dr Stone, talk about the vision and purpose behind Novalia, her tech and her creations. Here's a quote from the interview.

"You're more likely to remember things because there is something to remember," noted Stone. "If nothing happened, there's nothing to remember. How can we deliberately create friction and brand that friction with a look, with a feel, with a color, with a sound, with a smell, that something happens in some way? It has a moment, rather than mindlessly pressing a button and a light comes on. That friction is part of your journey." (Zanger, 2018)

To the layperson, these products may seem more of a curiosity, but to Stone, the whole point is to open up and reconnect people's minds to what's in front of them — the added friction that gives pause. (Zanger, 2018)

I think this is an inspiring way to approach PR and as an artist, it's something to keep in mind when making merchandise or developing a live show. Having something tangible, that the fan can relate to and experience.

Cool Promotion Ideas

PR is most Effective when it serves your targets' needs as well as your own. (Foree, 1992)

Find the treasure.

I would place my flyers in coffee shops near my next show venue and leave clues on my Instagram for my fans have to find them. If they find it and scan, the QR code and can get a the single, remix for free or a free ticket to the show.

Regram

If they find a flyer and post a video of it on their social media using my hashtags and Handle, they'll be entered into a competition a to meet me before the show backstage and watch my soundcheck.

Improvements and Future Development

I also found that the touch board need to be powered by a power bank or a LiPo battery with a minimum current of 50-60mA^{xix} or via a computer, using a mini usb cable. Because portable chargers run out, and have to be charged, and you have to fiddle with inserting a cable, I think it would be more efficient if the poster used solar power, or relied another source of energy that was inbuilt, and thin/incognito enough to be not noticed.

Right now, it's not immediately clear or obvious that the user can or needs to interact with the flyer, so I thought it would need to be demonstrated first by the person giving out the flyer. Or to have a graphic on the flyer initiates an action or which says press here.

In the future it would be great if there was a sensor or the clip plays automatically when the flyer is picked up.

What the Future looks like for my project and scope for cross industry use.

BRANCHING INTO OTHER INDUSTRIES

Marketing is engaging customers and managing profitable customer relationships. The two-fold goal of marketing is to attract new customers by promising superior value and to keep and grow current customers by delivering satisfaction. (Philip Kotler, 2017)

I see this as potential business that could go further than just promotional flyers.
Other ideas I thought of were:

- Festival posters.

Imaging, walking past you're a poster for Glastonbury or Wireless festival. It has all the different artists names on it, and when you press a name it will play a clip of their music.



A Gig or festival Flyer with more than one act.



When you click on an artist's face or name, a sound clip of their music will play or a voiceover over of a recorded message from the artist. This is an amazing opportunity for artists to engage with fans on a new level.

- Tour Flyer
- An interactive Museum installation
- Street Installation / Soundscape
- AR Experience

Places these can be found

- Bus Stops
- Anywhere posters are put up
- Youth Centres
- Tube stations

Dr Kate stone has shown me that this tech can be used in other industries. When made well it can be used in other industries outside of music, for example:

- The fashion industry (London Fashion Week)
- film and Movie Posters



I would partner with a speaker company like Bose or Sennheiser, to have a built-in speaker attached to the flyer or poster, (e.g. a sound bar at the bottom or at the sides.)

As a singer/songwriter, I would love to be a pioneer of the way artists interact with technology both on stage and the fan experience off stage.

I would add a QR code to the flyer so that when a fan hovers over the flyer, they'll be sent to the music video or streaming site, or if it's a concert flyer, they'll be able to buy a discounted ticket.

In an even more ideal and techy world, if a fan has Bluetooth on their phone switched on, when they pick up the flyer, a push notification will be sent to their phone with the artist info and links. This is something that some retail stores use when customers who have their app downloaded and location settings on, they'll receive a notification with a discount or an offer for them to use as an incentive.

Apple has installed about 20 iBeacon transmitters. The transmitters use Bluetooth wireless technology to sense your exact location. That's not possible with GPS, which don't work well indoors and aren't good at distinguishing between locations that are just a few feet apart. (CNBC, 2013)

The implications go beyond Apple stores. One day, commuters might get information on subway delays as they stand on the platform, while museum visitors might get details on the painting they are standing in front of. Other retailers, of course, will be also able to offer special deals or track which aisle shoppers spend the most time browsing. (CNBC, 2013)

I also love the idea of VR and AI, so I would play a video or a clip of me when the fan hovers over the flyer. Similar to Giggs Promotion AR promotion of his new album. The first 1.18 seconds of his music video show the VR experience fans would have experienced. (See Appendix)^{xx} (sn1giggs1Youtube, 2019)

The album is being promoted via an AR wall mural in the city, created by Gate Reality, an AR and virtual reality (VR) production house, and ALLOVER, an experiential advertising agency. All fans need to do is download an app via a QR code at the wall, then point their device at the wall to watch the hand-painted mural come to life with a scene based on the album launch video. (Graham, 2019)

Why my project is an awesome Idea.

Music has always been about building, sustaining, and reworking social relationships and institutions. No matter how commercialized it becomes, it can 'never be just a product.' (Hu, 2018)

My Interactive project adds a fresh and interactive element to regular promotional flyers. Right now they give the information that's needed, and then are easily disposed of because the fan has everything, they need from it.

Also, a lot of artists are using digital flyers online now, to save costs, with the rise of merchandise, crowd funding campaigns and vinyl purchases, and it's evident that fans want things they can interact with, and keep as memorabilia of their favorite artist.

Being able to interact with a flyer is a great way to achieve this. To give a fan the ability touch, feel, and hear about the artists story is the future.

I'm also very interested in selling to the fandom and super fan market and creating an engaging experience for superfans.

I found on YouTube, many unboxing videos of VIP boxes sold by artists for their world tours, and also festivals, for example, Coachella^{xxi} and Taylor Swift.^{xxii}

This interactive flyer can be showcased on a merch table at a show that fans can interact with before and after a gig to promote a new release or something exciting. It can also be packaged and sold as merch, as something to be valued and kept.

Imagine an Interactive poster, being sold at a gig with exclusive music in it that can only be heard on the poster. Then at the gig, the artist records a personal message for the fan at an extra cost. A Win-Win for both the artist and the fan.

This is a premium vip experience for the fan, and a way to make them a superfan for an affordable cost.

This can also create a new revenue stream for artists and creators of music. If this technology was commissioned for use by an advertising agency and used an artists' music, the creators will be paid. E.g Posters, Film posters at bus stops, A Stop the Knife Crime Campaign, Cancer Research, Film posters at Bus Stops.

[A Future Business Model](#)

This could also lead to me being a PR/marketing consultant for Record Labels and brands.

If this was being monetised into a business, I would set up a website, where the Artist, Label, Festival Promoter, etc., would buy a custom-made flyer for their promotional use.

Similar to Canva.com.

- They would first choose the size of their flyer,
- Upload their artwork to the website,
- The mp3's they want to play,
- Where they want the trigger points are and how many flyers they want. E.g 500 a5 flyers.
- We would design and make the flyers

I would also have an extra option where our team could record and/or edit the voiceover clips for them, to mix on the promo material, or design an illustration or graphic for an extra premium cost.

The final cost would be dependent on what they need, how many they promotional materials they order and the cost of the electronics.

The ideal scenario is that interactive flyers become the standard when it comes to flyers, and I'm the main or only supplier.

Fan Survey and Consumer Feedback

I made a questionnaire survey for music fans to see if they would be interested in my project.

Click here to view my final survey results

<https://www.surveymonkey.co.uk/r/LFNCM8P>

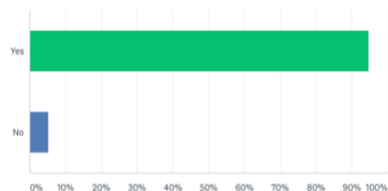
Here were my questions, and an analysis of the results



Q5

If your favourite artist recorded a message for you to hear, when a certain place on the flyer is pressed, would this encourage you to keep the flyer for longer?

Answered: 19 Skipped: 0

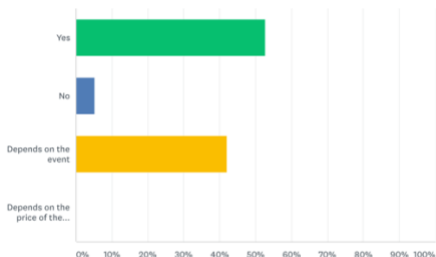


ANSWER CHOICES	RESPONSES
Yes	94.74% 18
No	5.26% 1
TOTAL	19

Q7

If a festival or show poster had a QR code on it, which led to a website to buy tickets before general release (e.g. a few days a day early) would you use it?

Answered: 19 Skipped: 0

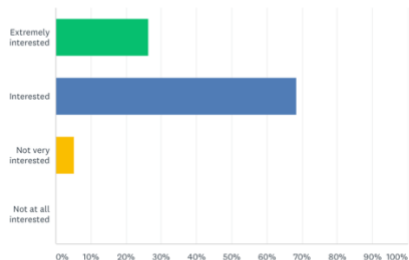


ANSWER CHOICES	RESPONSES
Yes	52.63% 10
No	5.26% 1
Depends on the event	42.11% 8
Depends on the price of the tickets	0.00% 0
TOTAL	19

Q9

Would you be interested in an interactive Music festival flyer or poster that plays a music clip when you press on the artist name? (e.g a wireless festival poster, plays Cardi B's song when you press on her name)

Answered: 19 Skipped: 0

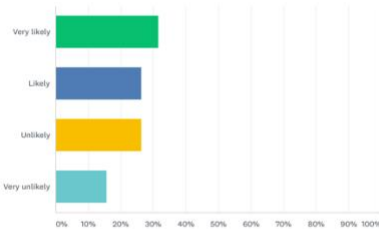


ANSWER CHOICES	RESPONSES
Extremely interested	26.32% 5
Interested	68.42% 13
Not very interested	5.26% 1
Not at all interested	0.00% 0
TOTAL	19

Q6

If a flyer had a QR code which linked to the artists music or social media page, would you use it?

Answered: 19 Skipped: 0

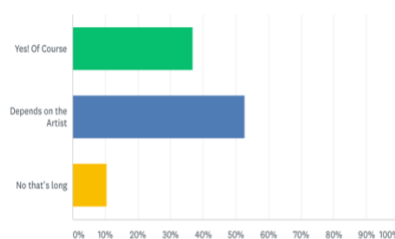


ANSWER CHOICES	RESPONSES
Very likely	31.58% 6
Likely	26.32% 5
Unlikely	26.32% 5
Very unlikely	15.79% 3
Total Respondents: 19	

Q8

If a flyer or poster asked you to connect your bluetooth to hear an exclusive new song from the artist, would you?

Answered: 19 Skipped: 0



ANSWER CHOICES	RESPONSES
Yes! Of Course	36.84% 7
Depends on the Artist	52.63% 10
No that's long	10.53% 2
TOTAL	19

I found the results interesting and also exciting because the results show and give me increased confidence that this *is* a viable business idea and fans would be interested in my interactive flyers and posters.

I also user tested the product with some of my peers who are also music students, and friends who are music fans, and received word of mouth feedback from them.

I had 100% positivity from the in-person user testing and here are some of the comments I noted down.

“It would be too expensive to give out at mass to public. But as a marketing tool for artists to give to A&R people and labels it would be really affective.”

“You could start a Kickstarter campaign to fund and launch it, or an Incubator program that will invest and help build your idea from a prototype.”

“Find a way to make it available to mass, like a a Smaller - sticker like circuit. To stick on the back of the flyer.”

I will continue to ask questions and send my survey out and will also make a second survey to send to music companies, artists, managers, and advertising agencies, to see whether the flyer is something they would buy when promoting.

Conclusion

Upon reflection, I am happy with my first prototype. Although I did have some issues with the paint and getting it to conduct to the touch board at first. There are still some design flaws, but I think as a prototype it's a great minimum viable instrument/product.

I still want it to be an all in one flyer or poster, which can output sound, and I believe it is achievable.

I have learned and discovered a lot from my research and designing this and also from the feedback I was given. It's opened up a new avenue of exploration and the world of creative technology.

I think the next step is to make the first all in one flyer, continue to plan and build this into a business and also to form a team to pursue it with, enter competitions and possibly start a kickstarter campaign.

My ideal team to join me consists of someone who's great at hacking and making, and has knowledge of circuits, graphic designer, a creative entrepreneur (another artist).

I am confident that made well, and with the right design and marketing, this can be made into a viable and lucrative business.

A win-win for both the industry and fans, and potentially a new income stream for artists too.

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Appendix

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- ⁱ <https://goo.gl/images/JmXt3i>
 - ⁱⁱ <https://mitxela.com/projects/stylocard>
 - ⁱⁱⁱ <https://www.redbubble.com/people/bl0r/works/22440055-akai-mpc-3000?p=iphone-case>
 - ^{iv} <https://goo.gl/images/8Sm4rG>
 - ^v <https://goo.gl/images/xobpnY>
 - ^{vi} <https://goo.gl/images/4ZKy2Q>
 - ^{vii} <https://www.youtube.com/watch?v=VnNCqtrexio>
 - ^{viii} <https://www.instructables.com/id/Musical-Greeting-Card/>
 - ^{ix} <https://leeselectronic.com/en/product/49611>
 - ^x https://www.bareconductive.com/wp-content/uploads/2015/11/TBWP_Basic_Skills.pdf
 - ^{xi} <http://www.novalia.co.uk/product/interactive-drum-poster>
 - ^{xii} <http://www.novalia.co.uk/patents>
 - ^{xiii} <http://www.novalia.co.uk/patents>
 - ^{xiv} http://www.youtube.com/watch?time_continue=427&v=Wo0YRr5UsYI
 - ^{xv} <https://www.tbwa.nl>
 - ^{xvi} <https://thispage.amsterdam/about>
 - ^{xvii} https://www.youtube.com/watch?time_continue=9&v=X6zPbogDPgU
 - ^{xviii} <https://youtu.be/06M898ybt4w>
 - ^{xix} <https://www.bareconductive.com/make/how-to-power-the-touch-board-with-a-power-bank/>
 - ^{xx} https://www.youtube.com/watch?v=buYd3uzRt_o
 - ^{xxi} <https://www.youtube.com/watch?v=5JLQj3Q8qSc>
 - ^{xxii} https://www.youtube.com/watch?v=w6eN4fyk_uk