

DJ Setup Assignment

In this assignment I will be looking at buying a complete mobile DJ setup to suit my needs, within a budget of £3000. I will be looking at advantages and disadvantages of different formats and their respective equipment. I will also have to assess what genres will be predominate in my sets and how my system will have to be adapted to best compliment them.

Different music formats

There are 3 main formats that people mix on today, each with their own advantages and disadvantages.

Vinyl Turntables

.Vinyl is an analogue recording format which means the audio signal that is produced is of a better quality than its digital counterparts. This is because vinyl is not constrained by the sample rate of the recording like digital formats. It means a far more accurate reconstruction of the sound wave can be produced by vinyl than a digital recording.

.Vinyl turntables are generally less expensive than their CD counterparts, a good quality Vinyl turntable can be purchased for a fraction of the cost of a similar standard CD deck.

.Many people argue there is a better control over what the song is doing, is it a much more hands on approach with no latency, this is particularly important when scratching for example, where being comfortable and feeling in control of manipulating the audio is very important.

.Also a certain credibility is held in many circles for those who mix on vinyl still, particularly in certain genres (hip hop, reggae, etc...), image is a very important part of being a performer and can set artists apart from competitors.

HOWEVER

.Vinyls are far more expensive to buy than CD's or MP3 downloads and it is therefore more difficult to build a collection of audio due to the extra expense.

.The quality of the audio will degrade slightly each time the vinyl is played as some of the vinyl is worn away, effectively giving your vinyl tunes a shelf life. This adds further expense to building and maintaining a vinyls collection.

.Vinyls can warp, this makes a vinyl unplayable and can happen quite easily. If vinyl is warped it is prone to skipping, this is when the needle will jump forward in the tune causing the timing to be thrown out, and potentially the mix will be ruined.

.Vinyls are much larger and heavier and less transportable.

OVERALL

.Vinyl format is less convenient with the expense and upkeep of new audio, but has better quality sound and a better control of the tune with no latency.

CD Decks

.Buying media for CDJ systems is much cheaper as it can work with digital files. Digital files MP3, WAV files etc... these can be purchased as a CD usually containing many more tracks than a similarly priced vinyl, via downloads for a fraction of the price of vinyl and burnt to CD. Another advantage of digital formats is that the files can be easily backed up(a permanent copy stored safely) and do not lose quality over time.

.CD decks will not suffer from the needle skipping, which is a serious problem in genres where beat matching is important.

.CD decks have a much greater capacity to manipulate the tune often with a much larger pitch range and a variety of key correction(resetting the key of the song to normal when the speed is changed) and reverse playback options are usually available.

.A little bit easier to mix with than Vinyl decks, feels like there is a computer doing some of the work for you, in some respects this is good but also made me feel like I had less control over the tune.

.CDs are much lighter and transportable than vinyl.

HOWEVER

.The cost of a single CDJ is far higher than that of a similar standard vinyl turntable.

.The digital files used by CDJ's and other MP3/WAV type files' quality is limited by its sample rate, many people argue the difference in quality now is negligible but many people maintain vinyls has a warmer sound due to its natural analogue harmonics.

OVERALL

.CDJ's are far more convenient and practical to the mobile DJ but a compromise in sound quality and control must also be considered.

MP3 Mixing Software

.Probably the cheapest and easiest way to build a tune collection and mix them

.Tunes all digital can be backed up and stored easily with no loss of quality

.Will often be looked down upon by certain music scenes as mp3 mixing is said to take a lot of the skill out of mixing, with automatic sync functions to get tunes beat matched at the touch of a button.

.Less control still over the tune being played.

Sorato

Sorato is a computer program that allows Digital formats to be played through a standard vinyl turntable with the use of a coded vinyl. It runs information on the progress of the coded vinyl track to a computer which corresponds it to a point on the digital file. This means digital files can be played as if they were on vinyl.

.This is good as the same level of control when manipulating the track as on a vinyl system.

.The files are cheaper and easier to come by and store.

HOWEVER

.Track can still skip and cause difficulties with beat matching

.▲ laptop or computer is needed to run sorato leading to further expense

.Still of a lower quality digitally recorded sound.

OVER▲LL

Sorato seems to have good points and bad points of both CD/MP3 mixing and Vinyl mixing but would be an alternative to buying

expensive CDJ's yet still being able to make use of more readily available digitized versions of tracks.

An Estimate of what the system will contain. **(To be re-assessed after pricing)**

.2 Direct drive Vinyl turn tables

I have decided on vinyl due to its higher audio quality (which I personally find noticeable), the fact it is cheaper to equip myself with a good quality model and the extra connection I feel when using Vinyl decks over CDJs. Possibly vibration dampening equipment.

.1 CDJ, MP3 or Sorato, digital source of ▲Audio

This will mean I can use high quality vinyl audio, and at the same time take advantages the practicality and convenience of digital media.

.4 Channel, 3 band EQ Mixer (with effects if possible)

I have decided on a 4 channel mixer as it will give me flexibility on how many sources of audio I can mix together. With a 4 band mixer for example I can mix 2 vinyl decks and attach a further CDJ or MP3 source even have a microphone in the mix. The 3 band EQ is needed to have enough control over the equalisation of the tracks to make them sit over one another without clashing. Effects are a bonus not necessary but used well are very effective when mixers tunes in and out.

▲ good Quality Microphone and Headphones

▲ good quality reliable set of headphones are essential as they need to be able to give a loud enough high enough quality representation of the track to the DJ, so that it can be heard over the main club speakers and the monitors when on. ▲Also choosing a reliable

microphone is very important as it is going to suffer serious wear and tear being passed around and potentially dropped by performers. It is also important to select an appropriate mic for the job, probably a more durable dynamic style mic, a condenser would be too sensitive and fragile.

.Set of speakers capable of big bass maybe subwoofer
Having speakers that can cope with the tracks and mixes you play is vital as however good the mix and the tracks are if the speakers cannot handle the output it will sound terrible. Also included in this is a set of monitor speakers that can stand out over the main output in the booth and give a good representation of the mix as its happening with minimum latency. Relying on the system in the venue is risky, it would be better to have reliable system that I know is perfectly suited to the styles of music.

.Good quality Cables and connectors

Good cables and connectors are often overlooked, this is a mistake as poor quality connections will mean the quality of the signal will suffer. It is worth getting good cables as it is a small expense that can make a big difference.

.Laptop

This will mean I can manage digital tracks and samples and burn them to CD or load them into the sorato bank to be used. Also a laptop is priceless for networking and promotion.

.Lasers lights and club decoration

The atmosphere can add a lot to a performance and it would be nice to be able to include relevant decoration and lighting. However I would say this is less important as it is not necessary to the set and venues will often have their own décor.

.Membership to a musicians union

This is a cheap membership that will give me; free legal assistance, equipment insurance, help with promotions, and mean I will be entitled to a standard pay per performance. Not buying this is a no brainier as it has many benefits that may come in extremely useful, and save a lot of money and complication in the long run.

What will I need to consider to ensure my system is best suited to my needs

I will be playing the music I like to play on my performances which will usually include:

- .Jungle/Drum and Bass**
- .Dub step**
- .Reggae/Dancehall**
- .Hip Hop**
- .House**

There will be a mixture of other genres but mainly focusing the above. They all have similar characteristics that need to be addressed when considering equipment, and its capabilities.

Heavy Bass and Punchy Tops

▲ All of the tracks above feature big bass lines, these will often be the focus of the track and have a lot of detailed synthesis within them. To

play the bass lines at their best it is essential to use a speaker that can produce low frequencies with a high level of detail and volume. ▲Also very important is the percussion in the tracks, high frequencies are responsible for a lot of the clicks and snaps etc... that are fundamental to a natural drum sound. Some of these genres particularly house drum and bass and dancehall have fast drum beats which would sound very messy if there is not enough detail on the tops. The human ears are less sensitive to very high and very low frequencies so it is important to choose a system that can effectively make these frequencies more prominent. ▲system not equipped to handle the frequencies would distort as it tried to cope with the bass and treble.

There are other problems that need to be considered when considering low frequency sound at high volume. The bass will inevitably cause vibration in the system, this will affect various places in the system but the overall effect is a loss of sound quality.

The vibration can spread to the turntables which in vinyl decks can cause the needle to move and cause interference or even move it enough for the needle to skip entirely. This can be avoided by reducing the vibration that gets to the needle, this could be through a shock absorbing material between deck and table or using a heavier deck that is less susceptible to the vibration. ▲Also using a good quality needle and stylus.

Cables and connections are also effected by the vibration, the connections can be moved by the vibration, this can interfere with the signal or even shake the connection out entirely. This can be avoided by getting good cables or even XLR leads that clip in place.

Beatmatching and scratching

The technique of beatmatching is extremely important when mixing these genres this is putting the tracks in time with each other and playing them together in time in a mix. For a system to be capable of effectively beatmatching tracks, the audio sources (turntables, CDJ etc...) must be able to keep time well. This will mean I will have to use well made decks that will hold their time well. It would be advisable to avoid belt drive turntables or cheaper direct drives as their time keeping is not reliable enough for a professional DJ. Cheap CDJ's and MP3 tracks will hold the time better than cheap vinyl turntables and generally have a larger pitch range often +/-100%. This will mean that a wider range of tempos can be beatmatched. Scratching is a difficult technique that some DJ's will use that involves using one hand to move the tracks position and make new sounds from it and the other hand to

cut the fader in to use select parts from the new sounds to compliment the track(s). Many people say that vinyl is far better for scratching as there is a much deeper level of feeling and control necessary to scratching when using a vinyl setup.

People will want it loud

Whenever I have been to these types of shows the music has been very loud, people want to feel the frequencies as well as hear them. I must consider that the system will have to cope with these bassy tracks at very high volume without distortion so the system must be able to handle it.

▲Also monitors and headphones need to be able to be heard over the main system by the DJ and MC's.

Long term ear damage is also a concern when looking at issues caused by high volume.

Live MC's

In most of these genres a live MC is a big part of the performance, so a system that can cope with a vocalist to be included. This could be by buying a mixer with a mic channel or using a spare channel on the mixer. ▲Also important is a good quality mic with a good vocal response.

Atmosphere can play a big part

▲Appropriate decoration, lighting lasers etc... can add a whole new dimension to the experience and can really give a performance a professional edge. For this I think the right lighting could work wonders but the wrong lighting etc... could have the opposite effect, and make you look amateur. Would probably be best to buy good equipment or nothing at all.

Track selection

One of the most important parts of DJing. New releases are coming out everyday and a good DJ needs to keep on top of these and at the same time have classics that everyone knows and loves. The right mix of classic tunes and cutting edge releases is what will give you the edge on other DJ's. ▲Also having a broad enough selection of tunes to take the set wherever you want to go with it is important, stop the set becoming stale and samey.

