Mobile Reporting with a Smartphone

for Cultural Initiatives and Anyone Else Who Is Interested

radiofabrik

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MOBILE REPORTING WITH A SMARTPHONE

1. Basics

Mobile Reporting means that the entire **production of a show** is done **using a smartphone**. Whether recording or editing: theoretically, each step can be done using various apps on your smartphone. However there are pros and cons to producing content on your phone.

Pros
- you always carry your phone with you, useful for impromptu recordings
- no carrying around bulky equipment (laptop, microphone, audio recorder…) - the radio studio fits into your pocket
- no need to buy new things – (almost) everyone owns a smartphone

Cons
- storage
- battery life
- weak point audio quality (for actually good audio you'll need an external microphone
- not suitable for every context
- each smartphone is different
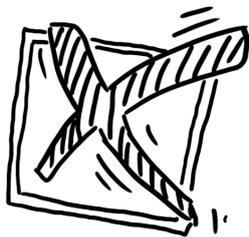
2. Preparation

To get the best possible result when recording with your phone, there's a few things that you need to do to prepare.

2.1 Flight Mode

There's nothing more annoying than having your recording interrupted by an incoming phone call or message.
It's not only disruptive to you and your interview partner at the time when it happens. Even if the recording doesn't get cancelled automatically, there will be an audible vibration or ringing on the record when you listen to it later on. That's why it's crucial to put your phone in flight mode. When you're in flight mode, you'll be able to record without getting interrupted by incoming calls or messages.
An added bonus: because flight mode also deactivates most of the other services (like WiFi, Bluetooth…) the **battery will last longer**.

2.2 Charging the Battery

Charge your battery before each recording. It would be a shame if an interview had to be cut short just because the battery is dead. If you want to be on the safe side, you can also bring your charger or a power bank to the interview. This will allow you to charge your phone during an interview if necessary.
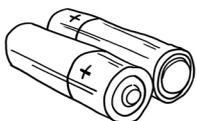
2.3 Checking Your Storage

Imagine you're in the middle of a recording. The person you're interviewing is just telling a captivating story when, suddenly, your phone stops recording because it's out of storage. How inconvenient!

This is why it's important to make sure you have enough storage before the recording. If you're not certain, delete some things beforehand or (if possible with your device) use an additional SD Card and save the interview on there.

Usually, the app you're using lets you choose where you want to save a file. Just look around in the settings for this option.

How much storage you'll need depends on the file format. If you record using wav (16bit, 44.1kHz) you'll need approximately 800 MB per hour. If it's an mp3 in its highest quality (320kbit/s) you'll need about 150MB per hour.

2.4 Getting to Know Your App and Your Microphone

It's also important to learn how to use your microphone (see Chapter 3) before doing any actual recording. To be able to make recordings that actually sound good, you need to know what your mic sounds like, how it records and what its strengths and weaknesses are. The same goes for the app you use.

3. Microphone

Just like with every other recording, the most important piece of equipment when recording with a smartphone, is the microphone. There are several options when it comes to audio recording with your phone. Each one has its advantages and disadvantages.

3.1 Internal Microphone

The easiest way to record on a phone is with an internal mic. Depending on the device itself, the quality will differ. Some smartphones are equipped with better, some with worse mics. Newer phones sometimes have more than one mic. This is why it's important to first find out where on the phone the microphone is located. To do this, we start recording and then speak into the phone from different sides. Where is the point where the recording gets louder? That's where the microphone is.
It is crucial that the microphone is not covered up during recording. Now all there is left to do is to find the perfect position of the microphone to the mouth. If the mic is too close to the mouth or if we speak directly into it, air is blown into the microphone which leads to unpleasant popping sounds. Usually it's best to place the mic slightly to the side of the mouth.

Pro: no further equipment necessary

Con:
- - it's very sensitive and makes low quality recordings if you're in noisy surroundings (loud streets, festivals, bars…)
- - wind can also lead to unpleasant background noise. If you want to record using an internal mic it's a good idea to find a quiet corner somewhere..

DIY Tip: You can fashion an improvised pop screen from a sock or a nylon. Just pull it over your phone and immediately, popping sounds (air from mouth and wind) should be less noticeable.

3.2 External Microphone

3.2.1 Smartphone Microphones

If you want to work more professionally, you could buy an external mic for your smartphone. There are many models made specifically for smartphones, in a range of quality levels. When buying one of them, pay special attention to their directivity. Omnidirectional microphones are less suitable for voice recordings, you'll get better results with a unidirectional mic.

3.2.2 Using the Microphones Available

You can also – and that's usually the higher quality alternative – use one of the **mics** typically used by **reporters,** like the C1000 with an XLR-connector, that we at the Radiofabrik use in our recording sets. They can be plugged into the headphone jack of your smartphone using a suitable **connecting link**.

You have **two options**: either you use the right cable or an adaptor. Both come with their pros and cons:

Kabel:

In this case, everything depends on what kind of port you have on your smartphone. There are very affordable cables for smartphones with headphone jacks (XLR to TRRS) and less affordable ones for phones with a USB-C port (XLR to USB-C).

Cons
- no phantom power, works only with mics containing batteries
- only some cables have an additional connector for headphones
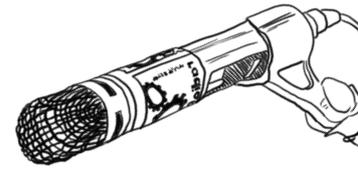
If you have an iPhone with a **lightning port**, you'll need an extra piece of equipment to connect anything to the lighting port.

Warning: TRRS is not the same as a regular mini connector! Pay attention when buying!

TRRS connectors have two rings instead of only one like regular mini connectors. Remember this when trying to identify them.

Adapter:

Special adapters for connecting a microphone to a smartphone offer additional options. Two models that are regularly used are the iRig Pre and the iRig Pre 2. Batteries can be directly inserted into the iRig. This means it provides phantom power to the microphone so the mic does not require separate batteries.

What's more, the iRig offers the possibility of plugging in additional headphones. This makes it easier to monitor the recording.

Advantages of an actual microphone: because it has a pop screen, it's less susceptible to wind, background noise is more quiet and voices are more audible.

3.3 Headset/Bluetooth Headphones

If you are not satisfied with the sound quality of your internal microphone but find buying an external mic too expensive, there is a middle ground: a phone headset. Since the headset is closer to the head, background noise is filtered out a little better than with the internal smartphone mic. The audio quality is of course not comparable to a professional mic, but the recorded voice will be clearer and more discernible than when using an internal mic. When recording an interview, the headset can be handed back and forth like a microphone. This way, however, you need to pay attention to handling sounds that can cause unpleasant noise. Because of this, it's best to only start speaking when the mic is already firmly placed in your hand. Working with bluetooth headsets is also possible.
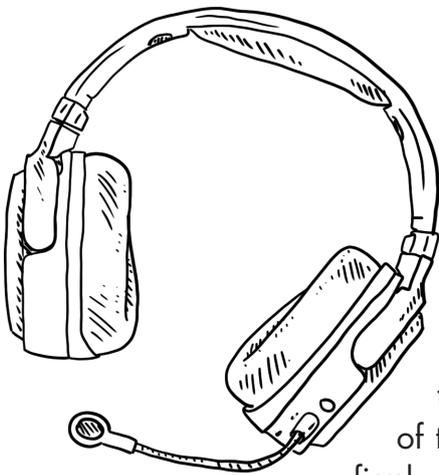
Monitoring: controlling the recording by listening to it live on headphones

Please note: with all of these monitoring options, there will be delays between saying words and hearing them, which can be highly irritating while speaking. This is why, when using a smartphone, it's often better to do a quick test recording before the actual recording and to listen to the recording right after making it.

4. Recording
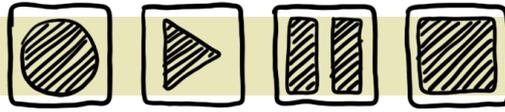
We recommend using an app that was specifically designed for recording because they offer more possibilities than the voice memo app you might already have on your phone. For example, you'll be able to control the volume at which it records and you can also do your cutting and editing with it.

4.1 Requirements

There are lots of different apps for recording. Which one you use depends on your individual tastes. Here are some things you should take into consideration when choosing your app:

- Data privacy: an important aspect. Which permissions does the app require? Does it want to access your mic and your files? That's okay because otherwise you can't record anything. Does it also want access to your contacts, messages, or something else? Why would the app need those? In this case it's best to be careful and look for another app.

- Level meter: the app should have a sound level meter so you can immediately see whether the recording is loud enough or whether it's clipping.

- Supports external microphone/headset: not all apps support external mics, so this should be tested before recording. It's crucial to plug the headset or the external mic into the phone before opening the app. With some apps you'll be able to choose the external microphone/headset as a source in the settings. Other apps will recognize the external mic/headset and choose it automatically. You can test whether this will happen as follows: First, record something without the external mic/headset, then make another recording with the external mic/headset. If you hear a difference when comparing both recordings, the app supports external mics.
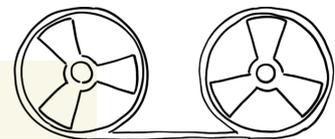
4.2 Example: Recording With the Lexis Audio Editor App

There are also other apps that can be used, like WavePadFree, Goldwave (beta version) etc. The ways in which they work are similar, so which app you prefer is up to you. In the following example, we are using a very simple app called **Lexis**.

Limitations: Lexis can only do mono recordings and the free version of the app can only save files in the wav format. Mp3 files can only be created in the full version of the app (which, as of now, costs 6,50€).

4.2.1 Overview

1. **Menu bar:** up here you can open already recorded audio files or save new recordings. You can use the magnifying glasses to zoom into and out of a recording. Clicking the three dots all the way to the right, will bring you to the menu where you can find editing tools and settings.
2. **Level:** here you can see the volume while recording. The sound level should be between -12db and -6db.Rec
3. **Rec Volume**: here you can change the sound level while recording, making it louder or more quiet.
4. **Play/Pause/Record/Stop**: this is where the recorded file can be played ("Play"/green triangle), the playing or the recording can be paused ("Pause"/blue columns) and a new recording can be started ("Record 1"/red dot). It's also possible to add a new bit of recording to the end or even the middle of an already existing recording. Just go to the exact spot where you'd like to add something, press "Record 2" (yellow circle) and start recording. To stop recording or playing, press "Stop" (grey rectangle).
5. **Recording display** here you see the recording. In this display, the recording can be edited (cut, effects etc.).

4.2.2 Recording

1. Here is a step-by-step guide on how to record your own audio file. **Connect external microphone or headset** (if using one)**.**
2. Open the **app**.
3. Press the red "Record" button to make a test recording
4. While doing that, pay attention to the sound level and, if necessary, change with "Rec Volume" until the right volume is reached.
5. **Press "Stop" button to end the test.**
6. **Listen to test recording.**
7. If everything works, start the actual recording by again pressing the red "Record" button. The app will warn you, saying "The file has not been saved. Do you want to save the file?". Because it was only a

test recording, choose "Discard and create new file". Now you can record your actual file.

8. **Save recording. (see next point)**

4.2.3 Saving a Recording

To save a recording, click "Save" (1). This will open the save window. Here (2), choose the folder that you want to save your file in, give the file a name (3) and choose its format. In the free version of Lexis the format can only be wav. In the full version, change it to mp3. Lastly, click the "Save" button (4).

4.2.4 Editing a Recording

It's possible to edit recordings in the Lexis app. However, since this can be a rather fidgety process, we recommend you transfer the saved files to a computer and edit it there with Audacity as usual. If you still want to edit with Lexis, here's how you do that:

Whether you want to cut something out, copy a section to somewhere else or use a specific effect: the first step is to mark the section in question. You can do this using the two markers (as shown in the picture). They mark the beginning and end of your selected area.

With the two markers, mark the section you want. Now, if you press "Play", you will only hear the audio from the marked area. This way, we can check whether we have marked too much or too little and change the markers accordingly.
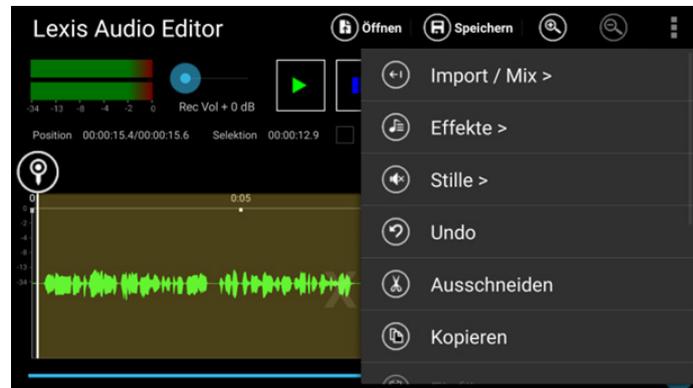
In the next step, choose what you want to do with the marked section. To do this, click on the three dots in the upper right-hand corner. This will open the menu where we can choose from all the important functions: scrolling down a bit, you can see that we have the options of cutting out the marked area, of copying, deleting, or trimming it (the last one means that everything except the marked bit will be deleted).

If you want to use an effect, click on "effects" and then choose the one you want. The effect that we use the most is Normalizing, but Fading can be useful for fading music in and out.

If you make a mistake, you can undo the last few steps using the menu.

The app has even more editing options. These make it possible to edit a single track recording. If you need multiple tracks however (for example to add background music or sounds to a spoken text), you'll have to switch to the computer. Since the editing process on a smartphone is usually very fidgety, we highly recommend editing your files on a computer anyway.