TC 00:00:00.00
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6

WHAT ARE THE TECHNICAL CONSIDERATIONS WE NEED TO KEEP IN MIND?

There are a number of technical choices that need to be made before you can begin shooting or disseminating any video. This Component includes overviews of the different types of low-cost video recording devices, their strengths, weaknesses, and examples of situations for which they may be most appropriate. It also covers peripheral devices, editing software, and other important technical choices. This section will not make recommendations for the best devices. Instead, it aims to inform you of likely technical considerations, so that you can assess what is most appropriate for your situation.

COMPONENT GOALS

BY THE TIME YOU HAVE FINISHED THIS COMPONENT YOU WILL:

✓ *Be able to determine which devices, accessories, and software you will use for your video activity.*

NOW THAT YOU HAVE DECIDED how you want to incorporate video into your project, you will need to determine which devices are most appropriate to achieving your objectives. Since the right combination will vary based on each situation, it is not possible to suggest exactly what choices you should make. This Component will, however, help you to understand most of the options available and guide you through the process of making your own determination. These options have been divided into four core sections, as follows:

1. Video Devices
2. Dissemination Devices
3. Peripheral Devices and Accessories
4. Software

All of the information included in this section was accurate at the time of publication, but it is important to remember that video technology, like most other digital technologies, continues to develop at a rapid rate. Before you make any final decision, you are encouraged to do your own independent research into other consumers' opinions and whether there have been any advances in technology that might better serve your technical needs. CNET (http://reviews.cnet.com) is a great resource for both expert and consumer reviews.

You can use the **Cost Calculation Worksheet** in the worksheet section of this Component to keep track of your total estimated cost of equipment, accessories, and software. Although hardware and software costs will comprise only a small portion of the total costs associated with implementing any activity, they can add up. This worksheet will help you to calculate a rough estimate of what these costs will likely be. If your estimated costs are above your available budget, you will need to revisit the scope of your activity or the methods you are planning to use.

The worksheet is divided into five columns:

- **ITEM** – This is the name or type of device, accessory, or software you plan to use.
- **DISTRIBUTION** – This is the scope of distribution for each device. For example, you may plan to distribute video cameras to each district and projectors to each village.
- **# NEEDED** – Based on your distribution plans, this is the total number of items needed for the activity.
- **PRICE PER UNIT** – This is the price per unit of each item.
- **TOTAL PRICE** – This is the number of items needed multiplied by the price per unit.

Once you have listed everything that you plan on purchasing to implement your activity, add up the total price of each item to determine your overall cost. If you are operating a multi-year project, you will want to also consider estimated replacement costs. You should base your replacement rate on prior experience in the country you are working in, since environmental conditions and likelihood of theft will vary. As a general rule, you should estimate that most of your electronic devices will need to be replaced within three years. Other accessories, such as tripods and bags, will likely last much longer.

All price estimates mentioned below are accurate as of March 2012 and based on retail prices in the U.S. Prices and availability may vary in other countries.

VIDEO DEVICES

This section will consider the strengths and weaknesses of the four different types of video devices that are currently most commonly available on the market: pocket (or mini) camcorders, standard camcorders, pro-sumer (or professional consumer) camcorders, and multifunction video devices.

POCKET CAMCORDERS

OVERVIEW

Pocket camcorders are small, point-and-shoot devices that have become popular because of their ease of use, size, and cost. Most models are limited to buttons for on/off, recording, volume, and playback, making them easy to use for even a complete novice.

STRENGTHS

The biggest strengths of these devices are their ease of use, compact size, and affordable cost. They often also come pre-loaded with basic editing software that can be used for quick and easy video editing. An increasing number of these devices are available in high definition (HD), although their limited chip and lens capacity may inhibit true HD quality.

WEAKNESSES

Internal microphones are often of limited quality, picking up most background noise. HD video quality may not be as high quality as video produced on standard or professional models. Most only have low quality digital zoom and limited or no ability to make manual adjustments (focus, white balance, etc.).

CONTINUED →

WHEN MOST APPROPRIATE

Their low cost and functionality make them ideal for use by individuals with no or limited experience, such as farmers, field workers, etc.

THINGS TO CONSIDER

Before settling on a specific model, check for the following specifications:

Audio input (microphone) jack. Given the limitation of their internal microphones, an audio input jack is crucial. This will enable you to use an external microphone to improve audio quality.

Expandable memory. The internal memory of most pocket camcorders is only enough for about two hours of filming. Models with expandable memory slots will enable you to use extra SD memory to increase the amount of filming you can do during one shoot.

Battery type. Most models use lithium ion batteries, although some run on AA batteries. Whatever the case, make sure that the batteries are removable and that they can be charged separately from the device. Charging batteries directly on the device increases the risk of damaging the camcorder in the event of power surges, especially once power is restored after a blackout. Battery life averages about 90 minutes in most pocket camcorders, so having at least two removable batteries and a way to charge the one not currently in use while recording is crucial.

CONTINUED →

THINGS TO CONSIDER (CONTINUED)

Audio connection. Most pocket camcorders record in mono, although a few do have stereo audio. If it is important for you to record in stereo, then you will want to keep this in mind. If you are unsure of the difference between mono and stereo, then you should be fine with either.

Availability. Two of the most popular brands (Flip and Kodak) have announced recently that they will be discontinuing production of their pocket camcorders. This will eventually impact technical support available for their models. Keep this in mind when purchasing either of these brands or even when purchasing from other brands. This is also important to consider if you are purchasing models that are not locally available, as you may need to return them to the country of origin in the event of any technical difficulties.

ESTIMATED PRICE RANGE

Most standard models cost between $100 and $150. Fuller-featured compacts reach around $200. Sony, Creative, RCA, Sanyo, Aiptek, and Zoom are all well-known pocket camcorder brands on the market.

STANDARD CAMCORDERS

OVERVIEW	Standard camcorders are generally about two to three times the size of pocket camcorders. They tend to have much more robust features than their smaller cousins, including higher-quality video and audio, optical zoom capability, larger screens, and more robust onboard features.
STRENGTHS	Generally speaking, most standard camcorder models will enable you to produce videos that are of a higher technical quality than pocket camcorders.
WEAKNESSES	Although prices vary, they are all more expensive than pocket camcorders. Audio input jacks may not be available on all models. Their additional features may be intimidating to novice users and could actually lead to lower video quality from improper usage.
WHEN MOST APPROPRIATE	Standard camcorders are probably best for use by individuals with at least a moderate level of experience creating video. They are likely not appropriate for use directly by farmers or field officers without in-depth training.
THINGS TO CONSIDER	The diversity of options and features of standard camcorders is expansive. Make sure that you research which model is most appropriate to your specific needs.
ESTIMATED PRICE RANGE	Prices for standard camcorders range roughly between $200 and $1,000 depending on features and quality.

PRO-SUMER CAMCORDERS

OVERVIEW	Pro-sumer camcorders come with all of the features that a videographer could possibly ask for, including wide-angle lenses, full-HD capability, and a suite of onboard features.
STRENGTHS	In terms of video and audio quality, these camcorders are the best you will be able to find short of a movie studio.
WEAKNESSES	The primary weakness from the perspective of most agriculture projects is the price and finding someone skilled enough to operate this type of camcorder.
WHEN MOST APPROPRIATE	Pro-sumer camcorders are most appropriate for use by or under the supervision of an expert videographer.
THINGS TO CONSIDER	To get the most value from a pro-sumer camcorder you should make sure that you have an expert videographer on staff, or at least have access to one to provide your staff with thorough training. This individual should also be able to advise you on the best model for your needs.
ESTIMATED PRICE RANGE	Prices generally range from $1,000 to $6,000 depending on the features and quality.

MULTIFUNCTION DEVICES

OVERVIEW

Currently there are two primary types of devices that are capable of recording video in addition to their other functions: mobile phones and digital still cameras (or digicams).

STRENGTHS

The primary strengths of these devices lie in their growing ubiquity. They may present projects with cost savings if they are already being used locally by beneficiaries and/or staff.

WEAKNESSES

The video and audio quality of these devices is generally lower than any of the other types of camcorders mentioned above. The one exception is digital SLR cameras, which can record high-quality video, although the price and complexity of these are a weakness relative to other devices.

WHEN MOST APPROPRIATE

At the moment, these devices are most appropriate in situations where the project, its partners, or beneficiaries are already using them for other purposes. In terms of mobile phones, most video quality is well below the minimum that will be useful for dissemination. This is certain to change as consumer demand for smartphones with high-quality video functionality continues to grow.

CONTINUED →

THINGS TO CONSIDER	Dedicated camcorders are still your best bet for overall quality. However, if you decide to use a mobile phone or digital still camera for your video activity, you will want to consider the following: **Video resolution.** The resolution should be at least 720p, if not 1080p. Also, look for at least 24 frames per second (fps). **Audio quality.** Internal microphones on these devices are likely to be poor. As with pocket camcorders, make sure that they have an audio input jack for use with a microphone.
ESTIMATED PRICE RANGE	Depends on the device and local availability.

For more information on technical specifications associated with video camcorders, visit CNET for reviews and comparisons. Their camcorder buying guide (http://reviews.cnet.com/camcorder-buying-guide/) and camcorder reviews section (http://reviews.cnet.com/camcorders/) are particularly worth visiting before making any final decisions.

DISSEMINATION DEVICES

As discussed in **Component 4**, there are a number of different ways to disseminate your videos, each with different hardware needs. For the purposes of this section we will focus on only the four methods that require specific hardware to implement. Computer centers or telecenters are not being included here based on the assumption that if you do use this method, you will be working with an established computer center and not purchasing your own equipment. If you are working with a computer center, the *Computer System Sustainability Toolkit* that was originally developed by AED (now FHI 360) is a worthwhile read. It can be found online at http://itac.fhi360.org/resources/computer-system-sustainability-toolkit/.

PICO PROJECTORS

PHOTO CREDIT: AAXA

OVERVIEW Pico projectors are small projectors roughly the size of a pocket camcorder. They generally use lithium ion batteries, have a navigable, internal memory system, and can project an image of up to 50 inches in ideal circumstances.

STRENGTHS Due to their size, pico projectors are extremely easy to transport in the field. They are also cheaper than many other hardware considerations.

WEAKNESSES Most models have a relatively low ANSI lumens rating, meaning that the level of ambient light in the room you are using it in will need to be fairly dim to prevent the projection from being washed out.

CONTINUED →

WHEN MOST APPROPRIATE

Pico projectors are best used for group dissemination in areas without dependable access to electricity, television, and DVD/VCD players, or computers.

THINGS TO CONSIDER

To get the best usage from pico projectors, you will want to consider the following:

Data input. Look for a model with microSD and microUSB ports. This will enable you to load videos onto the projector without connecting it to a computer or the internet. A device with internal memory is also preferable, as it will allow you to pre-load videos directly onto the projector.

Battery type. Since you will likely be using these projectors in areas without dependable access to electricity, you should look for a device with at least 1-2 hours of battery life. Removable batteries that can be charged separately from the projector are ideal for the same reasons explained above under the pocket camcorder section.

Audio out. The internal speakers on pico projectors typically have a maximum volume that is, for all intents and purposes, useless in a group setting. The only way to avoid this is to use external speakers. If the projector does not have an audio out jack, avoid it.

Light strength. You will want to make sure that the projector has at least 10 lumens. Anything less than this will make it almost impossible to use at a viewable resolution. Ideally though, look for a projector with 30 lumens or more. This will ensure that there is enough light to use the projector even with modest levels of ambient light.

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THINGS TO CONSIDER (CONTINUED)

File extension compatibility. Not all projectors support all file formats. Do not worry too much about this because you can always convert your videos into a compatible format (see software section for more information).

Remote control. Some models include remote controls, which you may prefer for navigating and pausing videos during dissemination.

ESTIMATED PRICE RANGE

Prices range from about $150 to $300 per projector.

One Media Player per Teacher has done a lot of research and experimentation with these devices. More information on their findings can be found online at: http://www.ompt.org/content/video

TELEVISIONS AND VIDEO PLAYERS

OVERVIEW

Televisions and video players (either DVD or VCD) are well-known video dissemination devices. Some newer televisions may also have SD card or USB ports, which would allow you to play videos directly without the need for a video player.

STRENGTHS

Televisions and video players are more common than projectors or computers around the world. Local availability of and access to these devices would reduce the need for the project to purchase its own dissemination equipment.

WEAKNESSES

If not presently available, transporting and powering televisions and video players can be logistically challenging and not cost effective.

WHEN MOST APPROPRIATE

Televisions and video players are most appropriate in circumstances where they already exist within the community you are working in.

THINGS TO CONSIDER

If these devices are already locally available, you will want to consider their location before deciding to use them. You will also want to be mindful of any local power dynamics. For instance, some farmers might be hesitant to watch videos in the house of a wealthy family or politician from an opposing political party. Location neutrality and physical convenience should be your top priority. If you notice that farmers are failing to show up once you have selected a location, you might want to reconsider your options.

CONTINUED →

THINGS TO CONSIDER (CONTINUED)

If these devices are not already locally available and you decide to procure them, you will want to consider a number of logistical factors as follows:

Do you have a secure location to store the equipment?

Do you plan to keep the equipment in one location? If so, is it convenient and accessible to farmers? If not, how do you plan to transport it?

Is the local power source dependable enough? If not, do you have the resources to purchase and power a generator?

ESTIMATED PRICE RANGE

You can purchase a 26-inch LCD television with a USB port for between $220 and $400. If you already have access to a television, you can purchase an inexpensive DVD player for between $30 and $50. Generator prices vary based on local availability, but in general you should expect to pay at least $200 for a basic gas generator in addition to ongoing fuel costs.

PORTABLE VIDEO PLAYERS

OVERVIEW	Portable video players (PVPs) are compact devices that generally have a three- to ten inch screen with a built-in DVD player. Some models also include USB and SD card memory input slots.
STRENGTHS	PVPs are compact and relatively light, so they can be easily transported. Models with SD card input may be more cost effective since you will not need to burn DVDs to disseminate your videos.
WEAKNESSES	Limited screen size. Also, with the increasing popularity of tablets and smart phones, these sole-purpose devices will likely be phased out in the not-too-distant future.
WHEN MOST APPROPRIATE	PVPs are best used when disseminating videos to only two or three farmers at a time.
THINGS TO CONSIDER	The three main things to consider when purchasing a PVP are its price, its screen size, and its input slots. At a minimum you should try to use a device with at least a seven inch screen — although nine inches is preferable — and USB and SD memory input slots.
ESTIMATED PRICE RANGE	Decent-quality PVPs with USB and SD memory input slots and a screen between seven and nine inches can be found for between $80 and $150 per unit.

TABLET COMPUTERS

OVERVIEW	Tablet computers are mobile devices with touch-screen navigation and screen sizes that generally range from seven to ten inches.
STRENGTHS	The touch-screen navigation can be more intuitive to some users than traditional computer navigation. Tablets are also light, easy to travel with, and typically have a longer battery life than laptops.
WEAKNESSES	Tablets are extremely popular and portable, so the risk of theft may be higher than it is with other devices. There is a higher risk of screen damage from repeated use than is the case with other display devices, such as computer monitors or television.
WHEN MOST APPROPRIATE	Given their limited screen size, tablets cannot be viewed by more than two or three people at a time. They are best used in circumstances where it is not possible or necessary to gather more than a few farmers together at a time.
THINGS TO CONSIDER	If you are using a tablet solely for video dissemination, it is probably not a good option given its cost and limited screen size. If you do use a tablet for dissemination to small groups, however, it is recommended that you have a tablet with a screen size of nine inches.
ESTIMATED PRICE RANGE	Most tablets with at least a nine-inch screen cost between $300 and $600. The much-talked-about Aakash tablet (or Ubislate 7) from India will supposedly be available commercially for about $60. Although it will only be available in India, it may be a sign of more affordable tablets on the way.

MOBILE PHONES

OVERVIEW	Mobile phones present a few opportunities for dissemination. They can be used to play videos directly on the mobile phone screen or you can connect the mobile phone to a television or computer monitor. A more recent opportunity involves using the phone as a projector. Although only a small number of phones currently have this feature, the number is likely to grow in the coming years.
STRENGTHS	Mobile phones are increasingly becoming ubiquitous, even in some of the most-remote villages of the world.
WEAKNESSES	Screen sizes are small and current onboard projectors are of limited strength.
WHEN MOST APPROPRIATE	If mobile phone access is common among your beneficiaries, mobile versions of videos may be useful to helpful reinforce messaging. Given their limited screen size, they are likely not useful as the primary point of dissemination. That said, as penetration rates continue to grow, video-enabled mobile phones represent a great opportunity to reinforce messaging with individual farmers through mobile video. Mobile phones with built-in pico projectors could be worth considering for field staff if you provide them with mobile phones anyway.

CONTINUED →

THINGS TO CONSIDER

Before deciding to use mobile phones for dissemination, you will want to consider the following:

File format. If you plan to disseminate videos via mobile phone, you will want to make sure that your videos are in a format that is compatible with your beneficiaries' phones. The most common format is 3GPP (*.3gp file extension). You can use free software to convert your videos into this and other formats.

Screen resolution. The most common screen resolution of phones being used by your beneficiaries is likely to be 240 x 320. Videos played in this resolution, especially those teaching agronomic practices, are likely to be of limited value as the sole point of dissemination. If you are already disseminating your videos on a larger screen using another method, providing farmers access to mobile versions of these videos may be useful for reinforcing messaging.

Projector brightness. Many of the built-in projectors are only six lumens, which is not powerful enough to screen videos to a group. As the technology improves and chipsets become smaller, this is certain to change. A few phones, such as the Samsung Beam, have already broken ten lumens. Make sure to check on this before making any purchase.

Total cost. Before you purchase mobile phones with built-in pico projectors, you should do a quick total cost comparison. Is the price of the device less expensive than buying a mobile phone and a pico projector separately? Is the quality of the projector as high as a stand-alone unit? What is the battery life?

ESTIMATED PRICE RANGE

Prices for mobile phones with built-in pico projectors currently range between $150 and $600 depending on the overall quality and features of the phone.

PERIPHERAL DEVICES AND ACCESSORIES

In addition to video and dissemination devices, you will need to consider a number of peripheral devices and accessories that can be used to help enhance your ability to create and share a quality product.

EXTERNAL MICROPHONE

External microphones will allow you to capture better quality audio than an internal camcorder microphone. The most common types of microphones are omnidirectional and directional.

Omnidirectional microphones record sound from all directions. They are most commonly found in lavalier (or lapel) microphones, which are clipped directly onto the lapel of the person you want to record. The benefit of these microphones is that you do not have to worry about pointing them in the right direction. However, they are also more likely to record background and other ambient noise present when recording. You can minimize this by recording your video in locations without large amounts of background noise (i.e., away from roads, crowds, etc.).

When recording your video, make sure that you turn off any mobile phones in the immediate vicinity. This will reduce your chances of recording any electrical interference with your audio.

Since the microphone is clipped directly onto an individual, if you are recording more than one person, you may need to move the microphone between speakers for each shot depending on whose audio you want to record. You may find it easier to use a wireless lavalier for these purposes, so that your "actors" can easily hand the lavalier back and forth. You can also purchase a "Y-splitter" for microphones that would allow you to plug two microphones into one audio input jack. The downside of using a Y-splitter is that it can increase audio interference and may lead to audio-level mismatches between the two input microphones. If you decide to use a Y-splitter, it is recommended that you experiment to make sure it works with the camcorders and microphones you are using before purchasing them — and additional microphones — in any quantity.

You can find low-end lavalier microphones for around $30 to $50, although a decent-quality wireless lavalier costs closer to $100. Y-splitters can be found for as little as $5.

Directional microphones record sound primarily in the direction they are pointing. There are two primary types of directional microphones: cardioids (meaning they pick up sound in a heart-shaped pattern in front of the microphone) and shotgun (meaning they pick up sound almost entirely straight ahead). Although directional lavaliers are available, they are not recommended, since head movement by the person being recorded can result in their voice being outside of the recording area.

Since most directional microphones are not clipped directly on the subject, they will require that your videographer (or an assistant) is constantly pointing them in the direction from which they want to record audio. They are best used in environments with high background noise, since they are less likely to pick up ambient noise outside of the direction of the microphone than an omnidirectional microphone. For situations when you will be recording in windy conditions, you will want to make sure that the microphone you purchase comes with a windscreen to reduce wind noise.

You can find low-end directional microphones with windscreens for between $50 and $100.

TRIPODS

Tripods are an essential accessory for video production. Although there are techniques that you can use to stabilize your shot without a tripod, there is no replacement for the stability you will get from a tripod. Decent quality 50- to 60-inch tripods can be found for as little as $20. You can also find mini tripods for as little as $2, although these are only recommended for indoor shooting where you will have a steady table to set them on.

SD MEMORY CARDS

If you have purchased a camcorder that has an expandable memory slot, you will want to purchase SD memory cards. Most pocket camcorders have between 32 and 64 gigabytes of expandable memory. Prices of SD memory cards have dropped significantly over the past few years, and you can currently find a 32GB card for about $30-$40 and a 64GB card for $80.

PORTABLE AUDIO SPEAKERS

If you decide to use a pico projector or a tablet for dissemination, you will likely want to purchase portable audio speakers to amplify their sound. Otherwise, there is a strong chance that their internal speakers will not be loud enough to reach everyone in your screening audience. Decent portable speakers can be found for about $20 to $40 a set. When purchasing speakers, make sure to check what their power source is. If you are somewhere with limited electricity, you will want to purchase speakers with rechargeable and removable batteries so you can replace them with a fresh set if they die while you are using them.

OFF-THE-GRID CHARGERS

Ideally, you should base all of your video production and dissemination activities in an office with access to dependable electricity. That way, even if you are recording or showing videos in villages off the electrical grid, you will still be able to make sure that your batteries and replacements are fully charged before heading out. In the event that you expect extended periods of shooting or dissemination in locations that are completely off-the-grid, you may want to consider off-the-grid chargers to recharge your devices. The most likely solution is a solar-powered charger, although you need to be somewhere that receives at least six hours of sunlight a

day to benefit from them. A solar charger with enough electrical output to power most of the devices mentioned in this component will cost you about $100 to $150. Do your research before purchasing any off-the-grid chargers, since not all chargers will give you the same actual level of output even in the same price range.

RECHARGEABLE BATTERIES

Rechargeable batteries are a must, especially if you are working in the field away from electrical outlets. Consider purchasing rechargeable batteries and chargers for any of the devices you plan to purchase for your video activity. Prices vary based on type of battery and manufacturer.

USB EXTENSION CABLE

Some of the pocket camcorders have short USB plugs that are used to connect them to your computer's USB port. The short length of these plugs can make them difficult to plug in and often puts stress on the camera itself. For about $5 you can purchase a male-to-female USB extension cable to connect your camcorder to your computer without having to hang the camcorder directly off of the computer.

PROTECTIVE CASE

While some devices come with protective cases, many do not. Make sure to invest in a protective case — even if only a basic padded cloth one — to protect your equipment from the elements and to reduce the risk of contact damage when transporting them. You can also extend the life of tablet computers and smart phones by using transparent screen protectors.

WIDE-ANGLE LENS

Although not a necessity, you may find that wide angle lenses are useful for establishing a wider field of view when recording your videos. Not all wide-angle lenses work with every camcorder, so you will want to check on compatibility beforehand. You can find a basic wide-angle lens for many of the pocket camcorders from between $25 and $50.

SOFTWARE

To create and disseminate your videos, you will most likely need five types of software programs, including applications for video editing, audio editing, image editing, subtitling, and file conversion. Since the primary focus of this toolkit is low-cost video production, this section includes free software examples for each of these purposes. Each of these programs meets a minimum threshold for quality and is easier or, at least, as easy to use as its commercial counterparts.

Keep in mind that commercial software programs often offer more robust features than free options. For the most part, however, the difference is only noticed by more advanced users. If there are any features that you cannot find from freely available software, you can consider purchasing a commercial program to address those needs. Since computers using the Windows operating system are most common, this section will only highlight programs that are Windows compatible.

If you are new to using any of these programs, search their websites for video tutorials that you can watch. If nothing is available on their websites, try searching for user-created tutorials on YouTube or Vimeo. If you still have not found what you are looking for, try looking on Lynda.com, a website that offers structured software training videos. Access is based on subscriptions, which run at around $25 per month.

Remember to always check the technical requirements for any program you are considering using so you can be sure it will run properly on your computer. Some of these programs — especially video editing software — can be demanding, so you will want to make sure that you have a computer powerful enough to run it. If not, you will need to purchase a computer that at very least meets the minimum requirements for the program in question. These costs should be considered in your **Cost Calculation Worksheet**.

VIDEO EDITING

If you are using a pocket camcorder, many of them already come pre-loaded with video editing software. They are generally extremely basic and allow for simple clip editing and limited transitions. For more robust features, consider using Windows Movie Maker. It is free, easy to use, comes pre-installed on all computers running Windows XP service pack 2, and has a number of useful features. If you are using Windows Vista or 7, you can download a newer version called Windows Live Movie Maker online at http://explore.live.com/windows-live-essentials-movie-maker-get-started.

Movie Maker is not without its hitches though. It is known to freeze on occasion and it is unable to use some video formats. The telltale sign that you are using a video format or codec[1] incompatible with Movie Maker is when you go to save your final product, the time remaining just keeps counting upwards. This can be extremely frustrating if you have finished editing your video only to find out that Movie Maker is unable to master it. A good way to avoid this is to place one of your clips into the Movie Maker timeline and then select 'Save Movie File.' If it is able to successfully process your request and save a new movie, then you know that the file format of your videos clips is compatible.

[1] A codec is software that enables video players to encode/decode digital videos.

More advanced users may be interested in experimenting with Lightworks, an open source, full-feature video editor. It is free to use, although access to a professional version with even more features is available for $60 per year. More information on Lightworks can found be on their website at http://www.lightworksbeta.com/.

If your computers are not powerful enough to run a full-feature video editor, but you are still interested in the extra features, you may want to consider exploring WeVideo (https://www.wevideo.com/), an online video editing platform. As long as your internet connection is stable and fast enough to upload your video clips, you can use WeVideo to edit your videos in the cloud—meaning you can also collaborate on editing videos with staff in other locations. The basic user package is free to use, so you can try it out first before deciding if you want to subscribe to a monthly or annual plan for more frequent use.

To learn more about other potential options, a useful website for video editing software comparisons and ratings is FindTheBest (http://video-editing.findthebest.com/). It currently has information on more than 65 video editing programs.

AUDIO EDITING

If you choose to use Windows Movie Maker or another basic-feature video editing program, your options for audio editing within those programs will be limited. Should you want to do any substantive audio editing or recording to add to your video for voiceovers or dubbing, you will need to use an audio editing program. One of the most robust and user-friendly free versions currently available is called Audacity. It can be downloaded online at http://audacity.sourceforge.net/. A step-by-step tutorial guide for editing and recording basic audio using Audacity has also been included on the accompanying DVD.

Using the same technical process, you can also create your own podcasts using Audacity, which can be distributed to local radio stations or community centers. Radio programming can be used to complement and reinforce messaging that you are disseminating via video. You can either create new content related to your video content, or you can even convert your videos into audio and edit them as mp3 files for distribution.

IMAGE EDITING

Image editing software is really an optional part of the video production process. You will need image-editing software if you want to create graphics or manipulate photographs to use in your video. One of the more robust, free programs is called GIMP (the GNU Image Manipulation Program). It can be downloaded online at http://www.gimp.org/.

SUBTITLING

Subtitling your videos can be a time-consuming process, since it requires someone entering the dialogue (or a translation of the dialogue) manually. That said, there are programs that make the process easier than it has been in the past. Aegisub is one example of a free subtitle editor that will greatly help you with this process. It can be downloaded online at http://www.aegisub.org/.

Basic subtitling with Aegisub is simply a matter of opening your video in the program, setting your font type, typing in your subtitles, and setting the timestamp for each line. After you have finished creating your subtitle, you can export it as a SubRip (*.srt) or SubViewer (*.sub) file, both of which are compatible subtitle formats on YouTube. Once you upload your video onto YouTube, all you need to do is upload the subtitle file under the Captions section. This process is known as softsubbing, because the subtitles are in a separate file from the video. The process of hardsubbing,

CRITICAL SUCCESS FACTORS

- Items purchased are based on what is most likely to help you meet your objectives.
- Items are appropriate for the capacity of your staff.
- Total cost (including necessary support and training) is reasonable within your budget.
- Items purchased are suitable to the local context, including environmental conditions, technical compatibility, availability of local repair, etc.

or encoding the subtitles directly onto your video film, is a bit more complicated. If you are interested in hardsubbing your videos, you can find resources on how to do so online.

FILE CONVERSION

As there is unfortunately no uniform file format for video files, you may find that your camcorder's output is in a file type that you cannot use with your video editing software, or that your video editing software's output is not compatible with your projector. There are a number of free programs that can convert files from one format to another, but the one that we have found to work best is called Format Factory. It can be downloaded online at http://www.formatoz.com/. A basic explanation on how to use it is included in the Audacity tutorial guide on the accompanying DVD.

NOTES

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WORKSHEETS

Cost Calculation Worksheet

COST CALCULATION WORKSHEET

ITEM	DISTRIBUTION	# NEEDED	PRICE PER UNIT	TOTAL PRICE
TOTAL COST OF ALL DEVICES/ACCESSORIES/SOFTWARE NEEDED TO IMPLEMENT ACTIVITY				