MICROCONTENT

DESIGNING FOR THE MICRO SCREEN

And Predicting the Future of Micro Screen Video Content

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Microcontent Research & Production
ENTERTAINMENT TECHNOLOGY CENTER
CARNEGIE MELLON UNIVERSITY
700 Technology Dr
CMU/ETC Room 5305
Pittsburgh, PA 15219

WRITTEN BY: Trey Davenport, Todd Waits, David Allen, James Valenti & Charles Brandt

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INTRODUCTION

As technology advances, methods of storytelling evolve. Each step is a natural progression from the media that spawned it. New mediums pop up nearly every day now ranging from digital video creation to distribution methods. The public eagerly embraces these formats hoping to be able to watch content on their own terms and re-create their own stories, capture their own thoughts, and leave their own mark on the world.

On-the-go handheld content did not come about with the invention of the Video iPod or video enabled cell phones. Mobile content has poked its head out trying to find a handhold for years. When photographs moved from glass plates to celluloid and the moving image came about in 1890's, media, as we know it, was born. Efforts to make the experience of the cinema more immediate and personal went underway starting with the Kinetiscope and culminating in the home television set. Before television, however, radios were the centerpiece of household living rooms. It was not long until the transistor radio put the audio device in the palm of the hand. The television would follow suit years later. The desire to have content available wherever a person went was noticeable, especially when hand held games took off. The GameBoy proved that people would play games whenever and wherever they could. As production costs lowered with the advent of digital video and distribution online became a viable option, people started watching content on their computers. Handheld PDA's were a means to transfer the content viewed online to a portable small screen. The iPod was merely an extension of the transistor radio and the Walkman, it led to the Video iPod which let viewers take not just music, but video with them. With the success of the camera phone, cell phone makers and carriers did not want to be left behind and enabled video on their phones. From rudimentary one to three frames per second capabilities to true thirty frames per second devices, cell phones off the entire gambit of experience.

Each new method explored creates the fear that its predecessor and ancestors are done for. Extinct. This is not, however, the effect that technological advances have on storytelling mediums. Theater did not disappear when the cinema popped up. Radio did not die when television took over. People still go to the cinema even though they can download or rent them from a store.

The progression in technology does not increase the ability to tell a story, but merely changes the context or method in which stories are told. Shakespeare will be retold and re-imagined on stage, in film, games, television shows, online and on the cell phone. The new mediums give a new perspective on something old, thereby making it new, fresh and innovative.

As the new mediums are created, new techniques and altered story structures are required. One cannot make a film and copy and paste the script into a video game. It is true that each new medium necessarily borrows techniques from its predecessors, we borrow techniques from similar venues and iterate on those until they become distinct and separate rules unto themselves.

WHO WE ARE

This paper was developed by a project team called, Microcontent Research and Production, at Carnegie Mellon's Entertainment Technology Center. The team was comprised of multiple disciplines fusing together entertainment and technological backgrounds. Disciplines present on the team were from areas of study such as television production, film, software engineering, audio engineering and animation. You can read more about the project and productions at this website:

http://www.microsodes.com

WHAT WE DID

The goal of the Microcontent project was to explore aesthetic and story experience on the micro screen of mobile devices, design made-for-mobile shows based on our explorations, and research and conduct user testing to construct a white paper on the mobile viewing market.

Additionally, this paper will outline what content producers can expect in the mobile video realm, how to make money in this emerging field, and better understand the technology of the future. Combining the elements of a market study and a content production study, we feel this paper will give content producers a well rounded view and head start when deciding to develop content for a mobile audience.

THE SHOWS WE DEVELOPED

29 and Single

"29 and Single" is a comedy chronicling the dating life of Dani Emmerson. Each microsode, or 3-5 minute episode, is a new disastrous date in her quest of finding a soul mate before she turns thirty.

The Fourth Agency

"The Fourth Agency" is "The X-Files" meets "Ghostbusters!" Agents Valerie Voss and Logan Riley locate, exterminate, or quarantine the latest bizarre paranormal threat, all of which are documented in ridiculous grocery store tabloids. Each three minute microsode features Voss and Riley on a new investigation saving the day as unlikely heroes against unlikely foes.

Samsara

"Samsara" is an animated piece following a character through multiple lifetimes. Each microsode is a new lifetime featuring a unique animation style.

Rapid Session Animations

Taking advantage of a computer program that allows users to generate personal animations quickly, we worked as a team rapidly prototyping animated content.

DISTRIBUTION

CONTENT DISTRIBUTION OVER NETWORKS

Once content is in the hands of distributors, there are a number of different ways for it to get to consumers' cell phones. The major distribution methods used by cell phone providers are unicast, multicast and broadcast. Choosing an appropriate distribution method is going to be very important in getting viewers to watch content. As noted in Wired Magazine's May 2006 issue, internet video is already changing the way we watch video. "[G]one, too, is the at-this-time, at-this-channel programming; now we're not only time-shifting with DVRs, we're space-shifting as well, watching stuff on our laptops, iPods, and cell phones - even loading it back onto our TVs."[1]

Unicast is, essentially, on-demand for cell phones. Unicast allows the viewer to select what show they wish to view and that show is sent directly to their cell phone. VCast from Verizon is one example of a unicast service that is already in existence. With VCast, users select the clips they wish to see, and those clips are sent directly to their phone. This model could easily be used to create pay-per-view services for cell phones. However, the bandwidth required for unicast becomes cost prohibitive with long, high definition content. Because the content is streamed to each phone individually, twenty users requesting the same show means that show must be sent twenty separate times. When shows become large, the cost to transmit them can become higher than the costs that viewers are willing to pay to view those shows. Below is a table of typical financial numbers associated with unicast, based on information provided by Scott Willis of Aloha Partners at the 2006 CTIA Wireless "Programming and the User Experience" session.

Service	Cost to Consumer	Bandwidth Usage	Revenue per Megabit
MMS Message	$0.20	Very Low	$20.47
3 Minute Low Definition Video	$0.99	Low	$0.06
6 Minute High Definition Video	$1.99	Medium	$0.02
30 Minute High Definition Video	$1.99	Very High	$0.00

Multicast provides a way for live on-demand content to be sent to multiple cell phones at once. Imagine that you have a major pay-per-view event such as Wrestlemania that is scheduled for a specific time on a specific date. Before the event occurs, twenty different users order the event. When the event is happening live, it will be sent out specifically to those twenty users' cell phones, but unlike unicast, the event will only have to be sent out once. This provides a great savings in bandwidth costs.

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[1] Chris Anderson, ed., "A Guide to the Online Video Explosion", http://www.wired.com/wired/archive/14.05/guide.html, Wired Magazine, May 2006.

Finally, there is broadcast. Broadcast comes over the air much like television broadcast. It allows multiple channels of content for users to watch at their leisure, switching between channels at will. Unlike multicast, broadcast is live all the time with all of the content being delivered when the providers schedule it – just like TV. Broadcast is the most cost effective way to distribute content over a network, as it allows as many users as are interested to view whatever program is being broadcast on the time. Broadcast also allows for numerous channels, which provides for the opportunity to reach niche markets. Qualcomm's MediaFLO is an example of a broadcast model of cell phone content distribution.

While unicast is the top money maker now, Scott Wills of Aloha Partners projects that by 2009, multicast (including broadcast) will account for $700M of revenue, downloads will account for $600M, and unicast will account for only $200M. Jason Rubinstein, senior director of Global Product Marketing-Entertainment at Motorola agrees with this view. "There's roughly a 90% cost savings to deliver content through a broadcast network, so if broadcast TV programming takes off, the carriers can't afford not to divert their live TV programming to a broadcast environment," he says. "However, we do see that streaming/on-demand clips will continue to be delivered through the cellular networks…for a price, of course."

ALTERNATIVE DISTRIBUTION METHODS
Smaller content producers who may not be able to get their shows onto the major mobile TV broadcast networks still have options, though. With the rise of video podcasting and viral videos, the internet is becoming many people's main source for short, entertaining videos. In addition to video podcasting, services like Google video and YouTube.com can help independent content producers can get their creations out to the general public. These clips are even crossing over into TV with shows like VH1's Web Junk 2.0, a show that is entirely made up of viral videos from the internet. These distribution models will even work with getting content onto phones, as more and more phones have USB connections so that users can load their own multimedia content onto their phones. Jason Rubinstein from Motorola notes, "One must also consider the other major access point for content -- the PC. Today we sell [tens] of millions of phones with USB ports and people connect them to their PCs and they synch their contacts, photos, music and videos. And when mobile phones have WiFi built-in so that end users can access content on-the-go through hotspots and home networks (i.e. off the carrier's network), the possibilities will increase even more." It is very clear that cell phones will support alternative distribution methods that can be utilized by independent content creators to get their shows to viewers.

WHAT PEOPLE ARE WATCHING ON
While there are a number of mobile video devices on the market – everything from portable DVD players to Apple iPods to Sony PSPs – the cell phone seems poised to become the major viewing medium for made-for-mobile content. At the 2006 CTIA Wireless conference, Phil Alvelda, chairman and CEO of MobiTV announced that MobiTV has reached 1 million paying subscribers. On the way to this milestone, their viewership doubled in just six months. Three of the six most popular channels on MobiTV are made-for-mobile programmed channels.

Cell phones are already ubiquitous in American society. With handsets featuring more sophisticated features and with screen sizes heading toward the sweet spot of three inches that was found in Strategy Analytics' research[2] by 2010, cell phones seem to be strengthening their position as the device most suited to made-for-mobile content.

DIGITAL RIGHTS MANAGEMENT

Digital Rights Management (DRM) refers to any technology that is used to enforce policies controlling access to data and hardware. Protecting the content distributed on mobile TV is obviously a focal point of network providers and handset manufacturers. To this end, the Open Mobile Alliance[3] (OMA) created its "OMA DRM 2.0 Enabler Release, an open standard for technology to handle the application of DRM for music, video, gaming, and other similar services delivered to wireless devices."[4] This standard relies on Public Key Infrastructure (PKI) to verify the identity of the handset trying to play the content. This sort of identity verification is already used in the 'certificates' that authenticate servers on the internet. Handset providers are also working to protect from being copied. Jason Rubinstein from Motorola says, "[O]ur role in the ecosystem is to support the most viable Digital Rights Management standards and ensure that everyone else in the food chain is doing the same."

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[2] ElectronicsTalk, "Screen size is key to mobile TV take up", http://www.electronicstalk.com/news/sgy/sgy130.html, February 6, 2006
[3] www.openmobilealliance.org
[4] 3GAmericas, *Mobile TV: The Next Big "Killer App" in Wireless: An Executive Overview*,
        http://www.3gamericas.org/pdfs/mobiletv_july2005.pdf, July 2005

CONTENT CREATION AND PRE-PRODUCTION

CONTENT DURATION
Duration in mobile television is a subjective argument. There is a market for short form entertainment, 3-5 minute durations, as well as long form which consists of broadcast standard 24 or 44 minute episodes. For unicast, or also known as on demand, content, 3-5 minute episodes are perfect length for various reasons: first 3-5 minutes enables you to construct a three act story. Typically, our scripting format consisted of a page an act. This limitation led to some very difficult story structuring. Additionally, technological and monetary limitations requires there to be a 3-5 minute time frame. Adhering to this length keeps the file size low and easily transferable while providing a positive return on investment to content providers. Anything longer will risk dramatically effecting profits. The industry is also embracing the idea of 3-5 minutes as a standard on demand duration. Greg Clayman of MTV Networks, at this year's CTIA Wireless Conference, iterated how stand up comedy formats lend themselves perfectly to short form content. A joke typically has a 3-5 minute story arch complete with a setup and punch line. Currently, 3-5 minute episodes of "Beavis and Butthead" are MTV's most popular made-for-mobile programming.

LONG FORM CONTENT
There is still a place for long form content. Long form content is best suited for broadcast distribution. Even though you would be creating standard thirty minute sitcoms and hour long dramas, the aesthetics and story structure would still need to be customized to the viewing experience. With the micro screen it is critical to provide fast paced story structures that are easily interruptible. Based on the user testing we conducted with our test mobile shows, we found people were easily sidetracked when viewing programming on a mobile device. In early renditions of our shows, the action was slower paced and people drifted quickly, often missing crucial segments of the story presented, or simply getting bored. To help keep people engaged, we hastened the cuts; however, even with quicker pacing small distractions can bury critical punch lines. An example of this was when we were group viewing a microsode of our comedy, "29 and Single." A test viewer coughed during a joke punch line, which obviously buried a typically very successful joke. That was a very small and almost insignificant distraction, but it was a clear example of the importance of layering microsodes with rapid successions of jokes or punch lines, so that if one is missed due to distractions, the microsode does not crumble. As the medium becomes more widespread and accepted by consumers, their comfort level and attention to the medium will increase, and we predict content providers will be able to provide more demanding content for viewers.

INTERACTIVITY
As noted by David Bluhm, CEO of GoTV, "Interactivity is a major part of this medium." GoTV is a mobile television network that offers on demand programming customized to the mobile experience. Interactivity is something special to mobile devices. The inherent nature of the device is interactive. Shows like "American Idol" and "Deal or no Deal" have incorporated cell phone interactivity with broadcast television. However, mobile television opens up an entirely new front of interactivity such

as direct interaction with live shows. For example, imagine immediate polling for "Who Wants to be a Millionaire" type shows. When a contestant is stumped on a question in "Who Wants to be a Millionaire" he or she can 'poll the audience' and get a percentage of what the audience feels is the correct answer. In mobile television, when polling an audience, they can poll even the non-physically present viewers. Viewers tuned in on their mobile device will be able to vote real time and see the results real time during a live broadcast.

Interactivity can also present itself in the form of add-on and extra content to mobile entertainment. Think of DVD extras or extras one can find browsing movie websites, available at the touch of the button to theme a viewer's phone. David Bluhm also stressed the importance of interactivity in the mobile television space because it provides "personalized entertainment and easy to access entertainment." People are able to obtain what they want, when they want, and personally customize that experience to them.

DESIGNING A MICROSODE

A microsode is a "made-for-mobile" episode of video content with three to five minute duration. According to Greg Clayman of MTV Networks, "made-for-mobile" is the true industry buzz word. When we designed "29 and Single" and "The Fourth Agency" we looked for a motif that allowed us to create what we call a, "show about shows." For example, in "29 and Single" each microsode would feature a new date between Dani, the main character, and a male counterpart. In "The Fourth Agency" each microsode would feature the agents investigating a new bizarre case featured in a "Weekly World News" type tabloid. We were not looking to write a thirty minute sitcom and release 3-5 minute segments. Rather, we wanted to tell a self-containing three act story in 3-5 minutes, which did not require continuations or the two act sitcom structure. Each microsode would be stand alone, so it would not matter if a consumer viewed the first episode or the one hundredth, they could still understand the story and share a laugh without having to be a religious viewer. Phillip Alvelda, Chairman and CEO of MobiTV, sums it up perfectly, "People buy books, but don't buy three pages at a time."

We also designed the structure of microsodes with the viral video craze in mind. We viewed a vast array of popular and unpopular viral videos circulating the net. Most of these videos tended to be three to five minutes in length and contained a rapidly evolving interest curve. Microsodes are essentially viral videos with a motif, emulating their interest curve and structure.

One major difference between viral videos and microsodes are the planned method of distribution. Microsodes would primarily become available through strict carrier networks, like V-Cast or iTunes. These distribution channels allow direct download to mobile devices. Viral videos are primarily browsed on the internet at websites like StupidVideos.com, Ebaumsword.com, and YouTube.com. From our experiences, most people viewing viral videos watch them strictly on computers and personal expression websites rather than their mobile devices.

In sitcoms we have what is called "water cooler conversation" where workers talk about the episodes of their favorite television shows they viewed the night before. With mobile viewing, we will now see "water cooler show and tell" where viewers no longer have to talk about what they saw, they can

show it! As sharing video becomes more widespread in the mobile space, microsodes and other short form work will lend itself to its own form of viral marketing, emulating the viral video craze on the internet. Distribution centers may also evolve to provide internet viral videos directly to the mobile space.

CROSS MEDIUM PRODUCTION PIPELINES
Viewing programming cross mediums, as in television to mobile device, is another facet of future strategies in providing mobile content. Using "Lost" as an example, producers could construct a production model that allows simultaneous shooting of made-for-mobile and television content. While they build the production around the shots they need for television programming they can supplement additional shots that are specifically made-for-mobile, without having to do an entirely new production. When the episode goes to editing, or post-production, two specific cuts can be created using the specific footage designed for the medium of which they are destined.

PRODUCTION

Rather than take existing content and move it onto our test device, the iPod Video, we created original content. Taking television shows and putting them on the iPod was already being done, so why repeat it. What truly lacked in the mobile video market was original content designed specifically for the viewing space in terms of duration, story structure, etc. In order for us to have enough control to experiment and iterate on the experience, we created *The Fourth Agency* and *29 and Single*. In terms of cost of production, we spent approximately $3,500 per microsode. This "quick and dirty" method of filmmaking gave us what was necessary to gather the data we needed to prove our hypotheses.

In the beginning, the biggest hurdle we faced was the screen quality. The resolution is relatively small, only 320 pixels by 240 pixels. While it is not High Definition, 1080 pixels by 720 pixels, it displays a remarkable amount of quality. Details such as small lettering on doors, make-up and stray strands of hair are still visible on the screen. The margin of error, or room for cheap filmmaking was not as drastic as we anticipated. A few years ago, mobile devices (cell phones and PDA's) had frame rates of about 1-3 frames per second (fps); today, many devices have at least 15 fps with quite a few already at 30 fps (the speed of video), the iPod being one of these. On screen text such as titles and credits are also easy to read with crisp edges at small sizes.

Due to increasing quality of video and audio playback on mobile devices, quality of the image capture cannot be sacrificed if people are going to pay for the content. We felt the small size of the screen would mask many of the shortcomings of the video; the low production value (quick and dirty filmmaking, if you will), however, still came through. Five or six years ago, low frame rates, slow data transfer, and poor audio quality would have hidden lesser quality productions. People will watch low quality content, but they will not pay fore it. Every visual element must be adapted to fit on the micro screen. Merely because the quality of the screen is good and many details show up, does not mean just bringing over existing content from other spaces will work. Everything from shot composition to art

Figure 1

direction to special effects must be tailor made to fit the small screens on mobile devices. The comparable amount of time and money goes into creating professional microcontent that goes into films or television.

The micro screen changes shot composition from what would typically be shown on a larger screen (i.e. television). The micro screen is small, around two inches in height, and fits in the palm of the viewers hand. Inherent in this small screen are limitations and

Figure 2

factors that inhibit certain shots. Most devices right now have a 4:3 aspect ratio, or the same as that of a television. There are a few devices with an aspect ratio of 16:9. The 16:9 aspect ratio is touted as having a more cinematic look and feel to it. Many productions are

done in 16:9 and letter boxed to fit onto a 4:3 screen to stay faithful to the cinematic look of the film. On the micro screen, however, one must take full advantage of the screen real estate that is there. A letterboxed program on even a 13 inch television can be made out with much more detail and clarity. Because Full House (Figure 1) was designed to a small 4:3 screen, it can make the transition to the micro screen a lot easier. Planet of the Apes (Figure 2), however, loses its cinematic, panoramic quality when placed in a frame so small. Due to the ever growing size of television, one can use letterboxed programming, but since a hand held screen can only get so big, the full screen must be employed to convey every bit of detail possible.

The amount of detail that can come across in any one frame must be managed so as not to garble the picture into a confusing mass of pixels. The size of the actor on screen is extremely important. The actor should not take up any less than three quarters of the screen. Once they are smaller than that, they begin to get lost in the frame and can no longer be distinguished from the rest of the action. Generally speaking, closer shots go a long way. The nuances of facial expression must be seen and for the micro screen, that means going in close.

The difference between producing for television and producing mobile content is merely in the design and structure of the content. The actual production itself is very much the same other than filming twenty-five made-for-mobile shows in the same time they would shoot two television episodes. The money, time and workforce needed to produce the content for television is equal to the money, time and workforce needed to produce professional level made-for-mobile content.

POST PRODUCTION
The pacing of the shows must be quick. If someone loses interest, then they will fill their entertainment needs elsewhere. Fast pacing, build up and pay off, or even fast cuts bring people into every new scene or shot. If there is a five minute shot of two guys walking through the desert, the viewer will seek entertainment elsewhere. With the short format entertainment, every second must be worth watching.

When people are on the go, they are interrupted often; the content, therefore, must be interruptible as well. This means that the viewer can be watching the microsode, look up, listen to someone, take a phone call, miss a few seconds here and there and still understand what is happening. A portable platform is ideal for commutes and such, but if the content is not portable, or, if the viewer cannot watch at his own leisure, then it fails to be interruptible.

In the editing room, the structure and narrative beats are honed and placed where they need to be. The short format of the microsodes requires the build up to one big, memorable moment called "The Moment." It is a series of smaller build-ups and pay-offs to create the overall arch of the show as a

whole. The beats are similar, as mentioned above, to that of a stand-up comedian's joke. The viewer is then guided from set-up to set-up and rewarded for their viewership. Using that structure and pacing, the viewer can be drawn into a simple story with a purpose that is easy to understand: Laugh Here.

ITERATION ON *29 and Single*

One of the shows we created, *29 and Single*, chronicles the dating life of Dani Emmerson. Each microsode is a new disastrous date in her quest of finding a soulmate before she turns thirty. She has one year remaining and has promised herself she would join the Convent if she fails to find her true love. Factors inherent in the show – small number of characters, few locations and clear objectives – lend themselves to being filmed with low budgets and short form.

This show was ideal for small screen viewing, but when filming was complete, something about the show did not work. After the first few edits, we began showing it around to get feedback from people; the responses received were varied, but generally came to one conclusion: No one liked the main character. Viewers felt detached from the main character. She was cold. Thomas became the focus of the episode and the object of the viewer's sympathy.

The problems came from several different areas. First of all, the protagonist was reactionary rather than proactive. She made no interesting decisions, just reacted to what Thomas said and did. The performances, especially Dani's, were a little flat. They did not convey a full character. Thomas' character was awkward, but not threatening or weird enough. He was endearing in his efforts. Because of his attitude and portrayal, he came off as the sympathetic character, the one people wanted to see succeed and see more. Ending the show on his face also gave the appearance that he would continue. Another thing that concerned us was the introduction of the characters themselves. How do we introduce characters in a manner that is brief and self-contained from episode to episode? The viewer cannot rely on the last episode to understand what is happening to the characters in the current episode, so they must be reintroduced every episode.

In order to fix the problems the episode faced, we decided to cancel the second microsode and shoot pick-up footage for "The Loneliest Number." The episode as a whole worked well, but there were a few narrative gaps and Dani did not connect with viewers. Several ideas about dealing with this problem surfaced. One was to create a blog for Dani – give her a place to write out the inner workings we did not get across in the show. Then we would take excerpts from that and film clips of Dani typing into her blog and voice over of her explaining the situation. Also, talking about using a reality TV based approach with interviews of Thomas and Dani interjecting throughout the action. The use of titles was an option in conveying the information as well.

With the options facing us, we found many pros and cons. The titles were just going to be text and we felt that gives the viewer too much to do (read) and they should be able to just watch and listen. The blog was something that has been done in varying degrees in the past (i.e. *Doogie Howser, M.D.*, *Sex and the City*); by using the blog, we felt we would not be capturing any new technique. Interviews have also been used in media, but not in the form of introspective writing. We wanted to capture what people associate with reality through Reality TV interviews.

The interviews were shot over a period of four hours. We shot them closer than the rest of the footage and made the environment completely different from the original location. The interviews are easily distinguished from the main action and the closeness of the shots helps give the impression that we are in their intimate space.

Picking up extra footage and changing the overall format of the episode helped it become something with which people can connect. Viewers who found Dani detestable before the iteration enjoyed watching it and felt her character opened up more and became the center of the episode. People who had not seen it before knew that it was about her as well. The confusion was gone. Her motivations in reacting the ways she did became clear. Some still felt she was a little cold, but did not think it was a detrimental flaw—it was her character and perhaps still a performance issue. Thomas still remains a sympathetic character, but was made a bit deeper. The interviews also provided beats of comic relief that were not there before.

ITERATION ON *The Fourth Agency*
The other show we created was *The Fourth Agency*. *The Fourth Agency* is *The X-Files* meets *Ghostbusters*! Agents Valerie Voss and Logan Riley locate, exterminate, or quarantine the latest bizarre paranormal threat, all of which are chronicled in ridiculous grocery store tabloids. Each three-minute microsode features Voss and Riley on a new investigation saving the day as unlikely heroes against unlikely foes.

The show did not work for the small screen due to several factors. The microsode itself was too long. We did not keep the structure of the writing down to the number of pages we should have. It was four to five pages instead of two or three. We put too many characters in the show to make coherent sense in the short form and on the small screen. On the go, people are unable to keep track of them. It could have worked with a longer format piece (fifteen minutes and up). The performances were very stiff and did not convey the humor of the situations, but rather the severity of the situation. Compound that with the music we chose, which is very good, but added to the serious nature of the show. It was intended as a comedy, and it should have played as a comedy, not a bad drama.

After dealing with the problems of *29 and Single*, we felt a similar approach would work for *The Fourth Agency*. We changed the format of the show to a training video to accommodate the performances. Also, we changed the music to a more corporate video feel that would juxtapose with the images in a very comical way. We added top secret interview sections to explain the strained plot and get to know the characters more. Due to the length of the microsode, we were forced to cut segments extensively; the microsode, however, lost coherence if we cut too much, so we were unable to cut the time that was necessary.

Our fixes for *The Fourth Agency* were not as successful as they were with *29 and Single*. It was successful in the sense that the fixes explained plot elements that we needed to clarify such as what the Fourth Agency is, why they are using Tylenol Sinus to kill a blob and why they are acting so poorly. The fixes did not, however, make the show any funnier or easier to watch. It just made it longer and

less funny. It also did not take care of the problem of having more people on the screen and in the story than it could support.

THE NEXT WAVE OF ITERATIONS
Another production was scheduled to commence, but was canceled as mentioned above. Had we been able to carry out the next set of productions, we would change several aspects of the videos. The length of the scripts would be kept down to less than three pages. The films we shot went a little long; by keeping it concise in script form we guarantee a more efficient final product. The focus would be on one key moment. The story would be one big set-up and pay off. Characters would be kept to a minimum (specifically in *The Fourth Agency*). The focus would be drawn to the two agents and the paranormal being. We would go closer with the camera. On set we would have a more people helping in order to be able to capture all the footage we need and move the production along smoothly.

SOUND FOR MOBILE DEVICES

UNDERSTANDING AUDIO MASTERING
In order to master audio, it needs be prepared in a way as to take in account the situation that is to be played. This is similar to preparing a moving image. For cinema, an image would be checked on a big screen to see if separated objects can be kept within the field of view. For television, text may be checked to see if it appears too small or blurry; if the colors translate well to limited dynamic range. For DVD, the image may be checked for video compression artifacts. Micro content may be checked to see if shot composition translates to a small screen.

When music and television is mixed in stereo it is also checked to see how it sounds if played in monaural where the left and right channels are combined and played from a single speaker. Surround sound for DVD movies are checked to see how they sound when they have been "folded down" by a DVD player. Folded down is another term for mixing to a lesser format. Some DVD players covert a surround mix to stereo by mixing the rear and center channels into the left and right.

All this checking adds time, complexity and compromise to the production of the end product. The more standardized the playback system, the better.

In movie theaters, the playback system of choice has stabilized and there is practically guaranteed to be a surround system. DVD video is presently at the same point film was some years ago. Although surround systems are widely available to consumers, there is a significant amount of stereo and even monaural audio systems. Additionally they must be checked for how they play back on mis-configured systems where, for instance, the audio is played back in 5.1 surround, but there are only 2 speakers connected.

MICRO SCREEN SPECIFIC AUDIO MASTERING
Microcontent, as it being delivered on what was traditionally audio only portable devices, will almost exclusively be only played back on stereo headphones or ear buds. This opens up a huge amount of creative possibilities the most notable being high quality surround sound. Surround has existed for many years on systems with only two speakers. This may seem counter intuitive but it becomes clear when you think about humans only having two ears.

The reason that two speakers do not automatically have the ability to make a sound appear behind a listener is that the outer ear, head and even the body acoustically modify the sound that one hears. This is analogous to how a voice sounds different speaking through a cardboard tube compared to speaking normally. If speakers are in front of you, you hear them as if they are in front of you. To make a sound appear to be behind a listener, the sound must be modified how the ear, head and body would modify the sound while taking into account that it is actually being produced from the front. To work properly, assumptions must be made as to where and how the speakers are placed, the location of the listener and how the room effects the sound.

The listening environment can have a significant impact on sounds just as different lighting such as florescent, incandescent or sunlight can effect how colors are perceived in a room. For instance, in a very reverberant space like a gymnasium it can be difficult to localize sounds because of the reflected sounds that echo from every direction. Recording studios can use products such as acoustic foam to help create an environment where the sounds from their loudspeakers interact with the room in a very controlled manner so as to give the recording engineer an accurate representation as to what is being played. Movie theaters also go to considerable effort in placing speakers and various room treatments to creating a controlled environment.

Headphones are a particularly effective way to create a controlled environment to listen to audio because the sound goes directly into the ear, bypassing or eliminating many of the effects of the ear, head, body and room that modify the sound. However, in many situations they are impracticable such as when a group of people sit together watching television. Music is frequently listened to with headphones but it would be unsafe to wear headphones while driving a car.

When headphones are used exclusively as the playback system, a very accurate three dimensional sound can be reproduced. Traditionally this has been accomplished through binaural recording techniques. One method is to use a special device that usually resembles a human from the top of the shoulders upward. Microphones are embedded into the head where the ears would be. Another method is to have an actual human being wear microphones that have very small tubes that are placed near the ear opening. The tubes are so small that they do not obstruct the ear, but allow the microphone to record the sound that enters the ear. Mostly, these techniques have been used for specialized audiophile recordings.

In modern times, digital signal processing can be used to model the effects that the ear, head and body have on sounds. The signal processing applies what is referred to as a head related transfer function or HRTF. The HRTF was developed from actual measurements of how perception of sound changes as its location changes. This technique allows individual sounds to be placed and moved at will. It is the basis of the much more complex processing that is necessary to produce the illusion of surround from two speakers.

The ability of the HRTF to simulate surround sounds is not a replacement for binaurally recorded sounds, but rather a complementary one. An orchestra can easily be recorded using a binaural technique to accurately capture a performance while HRTF based signal processing can be used to simulate how a n actors voice would sound talking behind you. When combined, very complex sonic environments can be created.

While sounds mixed for stereo can translate easily to being listened to with headphones, binaural recordings do not translate well to being played back on anything other than headphones. Thus, limiting their general usefulness and acceptance.

Microcontent is being delivered on devices that, up to now, have been used solely for personal, portable music devices. By their nature, headphones or ear buds are used almost exclusively. Because

of this, it has become possible to develop content with techniques that will enable a very realistic aural environment without imposing impractical constraints upon the audience.

MONO CAN WORK
When a viewer watches the micro screen, the image does not enter into their peripheral vision. Keeping many of the sounds panned to center, also known as monaural or mono sound, can help the viewer believe that the sounds are from the action on the screen. In certain situations, having statically panned sounds, sounds panned either to the left or right, or actively panning sounds, moving the sounds from the left or the right, can be useful.

QUICK PANNING CAN BE USED TO SUGGEST MOTION
Since the screen is small and it is desirable to use tight shots, active panning can be use to exaggerate motion. When a character is running across the frame, quick pans are useful. These extreme pans are best used for quick action. If the pan is too slow, the sound can be perceived as something that requires attention rather than merely supplemental material.

USING SOUND TO TELL THE STORY THAT MAY BE DIFFICULT OR UNDESIRABLE TO SHOW
Using sound, action can be suggested instead of shown. In "The Glob", there is a scene where Agent Riley has a hand full of pills. There is no shot where pills are shown hitting the floor, or on the floor. By adding a sound of the pills hitting the floor, the viewer does not have to see them to understand his hands are overflowing with them. On a larger screen, you would need to establish the pills hitting the floor with visual aids.

SOUND TO THE SCREEN SIZE
When using a video preview, we would frequently make the video very small to get an idea of how the visual and the aural would interact on a micro screen. With the small video, it is difficult to see details or at least quickly recognize them. Viewing it small would suggest which sounds should be added because with the video large, the details were obvious and could be recognized even without a sound.

ANIMATION FOR MOBILE DEVICES

The viewing of animation on mobile devices presents a unique set of opportunities for the animator to experiment both in style and content. People who view animations on mobile devices are no longer a captive audience. These people are often watching while waiting on public transportation, during their coffee break, and other situations which may require them to suspend their viewing at a moment's notice. In addition, viewing animation on mobile devices can be straining both on the viewer's eyes and arm. It is for these reasons that fast-paced skits are an excellent match to the mobile screen. Improvisational comedy skits fit this model and can provide an abundant source of inspiration for creating animations for this medium.

Improvised scenes were used in the production of several animations most notably the Rapid Session Animations. The Rapid Sessions first began with recording actors improvising a scene. The actors were each given a name for their character, the situation, the first line of the scene, and were asked to improvise the rest of the story until it ended naturally. By allowing the actors freedom, the stories often had a more natural flow and were able to capture the liveliness of the actors. During recordings, the actors were encouraged to speak more descriptively. This was done because for many mobile devices audio is heard through headphones. This higher quality audio allows additional information to be passed to the viewer that might have been missed because of the mobile screen's reduction in resolution. After recording, the audio was edited down and the timing was adjusted to better tell the story. This audio was then passed to the animator who used it to create an animated version of the skit.

In order to capture the spontaneity of improvised skits, we created a real-time animation tool in Flash. This tool allows for real-time lip synching by way of volume detection. It allows the animator to control the movement of the characters within a scene, the articulation of a character's arms, movement of a character's pupils, and provides a dynamic set of emotions which are conveyed through a character's eyes. The tool can support several different characters but, scenes are mostly limited to two characters to simplify the controls for the animator. All scenes are animated at fifteen frames per second to match the recording speed of Camtasia Recorder which we are using to capture the scenes as they are animated. Each scene is captured at 640X480 resolution which is later downgraded to 320X240 as it is converted for viewing on Apple's Video IPod. The resolution of scenes could be made higher if desired by changing the stage size in Flash and then simply increasing the capture size. The only limit to resolution is the size of the monitor on which it is captured.

While using the animation tool we have been able to rapidly identify and correct problems with viewing animation on the mobile screen. During the creation of the spider episode of the Samsara series a vector-based spider web was used in the background. When this animation was downgraded for viewing on the Video IPod, the spider web appeared very pixilated. The original spiderweb was one point thickness and was offwhite on a light blue background. In order to correct the problem with pixilation the thickness of the web was increased to 2 points and the color was given a slightly orange hue to better contrast with the background. Choosing what shots to use has also been a problem

rectified with the animation tool. As each piece is animated, the size of the workspace on the computer is larger than the screen on which the animation is meant to be viewed. This creates problems as shots are chosen which seem too long when viewed on the mobile screen. Because the animators took time to develop a sense for how shots would appear on the small screen, scenes often had to be redone with tighter shots. The animation tool allowed our animators to create and then see their animations on the mobile screen quicker and then to recreate the tighter scenes without losing much time reanimating scenes. Setting up and changing scenes with the animation tool is a simple matter of scaling the art and dragging it to the appropriate locations. To make it easier for the animator the characters are each given their own layer within Flash and the background is placed on another.

As animations were created with the real-time animation tool, further functionality was created. One big concern was managing the continuity of shots throughout scenes. A two part method was created to solve this problem. First, the major shots were broken up and saved as separate files. Within each file a solid rectangle was used as a resolution guide. The animator placed this guide where they wanted shots to go and then used the guide to position the screen capture window. After the capture had begun the animator clicks a button which makes the mask transparent, thus ensuring the same placement of shots throughout the piece. Secondly, it was discovered that shooting a scene all the way through from each shot was more efficient than doing each shot one by one. The animator made multiple takes of the entire scene from each shot to ensure the characters were animated most appropriate to the shot and then these takes were cut apart and then placed in the final edit. This method eliminated the frustration of managing the timing of the lip synching and character movement simultaneously.

Lip synching also presented challenges when it came time to capture animations. The audio for the vegetarian themed animation was recorded as two actors simultaneously improvised the scene together. This was done to allow the actors more freedom and to capture the spontaneity of the scene. The audio engineer then isolated the actor's voices to left and right channels. The final animation of the lip synching was captured by holding a microphone to a speaker playing the audio from a Video IPod. This method was chosen for the sake of saving time, though integrating the audio into the Flash program is planned for further iterations of the animation tool. After the video was captured the audio was stripped off and replaced with the higher quality tracks prepared by our audio engineer.

Creating animation for the mobile device changes the rules of Cinematography. Because of the screen's small size and limited resolution, color contrast becomes a powerful tool. For example, the long shot would seem to be ill-suited for the handheld screen, because the viewer will not be able to easily focus on the details of the scene. This problem can be overcome with the use of high color contrast. This is seen in the fox episode of Samsara, the white snow was used to create a strong contrast with the orange fur of the fox. This contrast allowed scenes where the fox took up less than 30% of the height of the screen to still be distinguishable and tracked by the viewers. The mobile screen also offers the possibility of new types of shots. One new shot was used in the spider episode of the Samsara series. This shot tentatively named the mobile close-up has the aim of showing part of a character at or close to life-size when viewed on the mobile screen. In the spider episode of Samsara,

the black widow spider's eyes are framed in such a manor that they take up the majority of the screen. This shot creates a sense of intimacy with the character that would be much more unsettling if viewed on a television or movie screen. The closeness of this scene was softened by compositing the tunnel spider's movement on the black widow's eyes to appear as if it was being reflected in them.

Another major difference between the mobile screen and other formats is the ability of the viewer to move the screen. This idea was experimented with in the Australian/American phone call animation. In this animation, the shots with the American speaking are shot as normal but, the shots with the Australian are rotated 180 degrees so the viewer must view the screen upside down. The act of turning the screen creates physical interactivity and with it a muscle memory that can be associated with the change. This association could be further explored to represent different states between characters or even a major event which represent a plot twist.

The ability to move the screen also offers the possibility of playing with the animation. For example, an animation could be created of only a mouth. The viewer could hold up the screen over their own mouth, augmenting their own appearance with the animated piece. This idea could be used to create games of passing the screen around as different parts of a story are told. It could also be used in the telling of a scary story where the screen is held up to the storyteller's face in place of a flashlight.

Watching content on a mobile device is a more personal experience than television or movies. The screen size is best suited to individuals or small groups enjoying content. The mobile screen also allows for easy casual sharing of content and exposure by word of mouth. This provides an excellent medium for product branding. AdultSwim of Cartoon Network takes advantage of this in their video podcast. Each podcast has an opening and exit bumper which displays the AdultSwim name. The podcasts themselves show clips from upcoming episodes, promote new pilots, introduce viewers to the creators of shows, and overall create a closer connection between the viewer and AdultSwim. These podcasts also provide a cheap distribution method that has the potential to reach a growing worldwide audience.

Facilitating the creation and distribution of personal content is a worthy pursuit. The possibilities of programs such as the animation tool and distribution methods such as podcasts on ITunes create a new forum for expression and promotion. With a robust real-time animation program people could create podcasts for animated blogs, personalized video greeting cards, and amateur animated shorts that can be easily and cheaply distributed.

CONCLUSION

In summation, our paper has defined essential cornerstones and guidelines toward preparing for the next wave of entertainment and technology. Microcontent only scratches the surface of what is to come in the mobile video market. It is apparent that changes must be made to make the micro screen a pleasurable and preferred viewing experience for consumers. Porting is never enough, neither for the consumers nor the producers.

In addition, our studies can strengthen efforts taken by others to study the viewing experience shared by consumers as the mobile market begins to expand. This paper serves as a letter to the content producers to teach them about the market, what the consumers want out of a mobile experience, and how to learn from the mistakes we have made while developing for this new medium.

APPENDIX A

50 Things to Know About Producing Mobile Video Content

With the increase in sales of mobile video players, including video iPods and video-enabled cell phones, there is an emerging market for content specifically designed for viewing on these devices. Porting television shows and movies to these devices may be considered acceptable for now, but as time goes on, consumers will demand content that is tailored to the devices they are viewing it on. Here are fifty things you need to know about producing mobile video content.

DISTRIBUTION

1. **Have a rough understanding of the technical side.** The technical limitations of the medium will affect both what you can and cannot accomplish with your content.

2. **On demand content should not exceed five minutes.** Beyond about five minutes, content intended for on-demand distribution – also referred to as unicast – will not make money. The cost to deliver it will outweigh what consumers are willing to pay for such content.

3. **Multicast can support longer content in an on-demand environment.** Multicast would be used for events like Wrestlemania or a championship boxing match, where users pay a certain fee to get the content at a specified time. By sending to multiple users at once, you only have to pay one deliver fee, but all of the viewers pay to watch.

4. **Broadcast allows content to be delivered over the air.** Broadcast mobile TV will allow content to be distributed over the airwaves like traditional TV, thus greatly reducing the distribution costs. This content will be viewable exclusively on subscription services.

5. **Broadcast will be the real money maker.** While unicast makes the most money now, the lower distribution costs associated with broadcast combined with the variety of programming it will be able to offer will lead it to eventually become the most lucrative method of distribution.

6. **The internet is an independent content producer's best friend.** With the rise of internet video sites like YouTube.com and Google Video as well as video podcasting, independently produced content can still find its audience. More and more phones feature USB connectivity to computers, making the internet a viable distribution means even for content intended for cell phones.

7. **Everything can be packaged together.** Mobile TV allows for great cross-promotional opportunities. While watching your show, it is possible for the viewer to purchase wallpapers and ringtones themed to your show at the touch of a button.

8. Screen size will be 3 inches diagonally. According to research done by Strategic Analysts[5], the sweet spot for mobile screens is three inches on the diagonal. It is expected that phone screens will reach this size by 2010.

9. Cell phones are poised to be the dominant mobile video device. At the 2006 CTIA Wireless conference, Phil Alveda, chairman and CEO of MobiTV, has already reached 1 million paying subscribers for their broadcast mobile TV service.

10. Digital Rights Management is already being worked on. Jason Rubinstein, Senior Product Director of Global Product Marketing-Entertainment at Motorola, says, "[O]ur role in the ecosystem is to support the most viable Digital Rights Management standards and ensure that everyone else in the food chain is doing the same."

PRE-PRODUCTION

11. Niche markets are a focus on this medium. The nice part about the unicast world is the ability to concentrate programming to niche markets and smaller markets. This is less advantageous on other mediums, which tend to go for a broader demographic.

12. Pre-Production for this medium is no different than any other. The same amount of preparation and scheduling goes into this medium as traditional film and television. While time, locations, and monetary factors may fluctuate, the methodology of it all remains the same.

13. Three to five minute unicast content can be shot in bulk like any other production. This will allow you to maximize profits and minimize time and money spent on producing the content.

14. Anticipate and research changing technology. New features available on video-enabled cell phones will mean new ways for viewers to interact with the shows they are watching. Be aware of these changes, and use them to your advantage whenever possible.

15. Keep character interactions intimate, with one or two characters. Trying to introduce too many characters in a short time span will lead to the viewer not really knowing any of your characters.

16. Have dynamic characters. Characters are what drive viewership, not what happens to those characters. If the characters aren't interesting, the show will not be interesting.

17. Keep microsodes simple; design around viral videos. Viral videos found on sites such as YouTube.com and Google Video are becoming increasingly popular. Designing content with the same

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[5] [5] ElectronicsTalk, "Screen size is key to mobile TV take up", http://www.electronicstalk.com/news/sgy/sgy130.html, February 6, 2006

simple structure is important for providing short, entertaining content.

18. **Keep microsodes fast paced in the writing phase**. To keep viewers interested in characters they are only spending a short amount of time with, the beats must be very quick.

19. **Gradually introduce more emotionally demanding content**. As your mobile series catches on, more emotionally demanding content can be introduced. Once viewers know the characters, they will be more willing to accept and identify with what is happening to them.

20. **Work with interactive firms to develop interactive add-on content**. Taking advantage of interactive capabilities of this format is going to be key to success. Just think of how popular voting on which contestants should stay and go on *American Idol* is.

21. **Keep it simple**. This translates across the board. It is sometimes tempting to add too much, especially what this medium does not require.

PRODUCTION

22. **Keep it Professional**. People will only pay for something they feel they couldn't have done themselves. They will not pay for a home video or something that is sloppy. Keep the production tight. Make a lot at one time and then put out one a week or so.

23. **Remember Interactivity**. The medium you are using is inherently interactive. Take advantage of that fact to reach the viewer in decidedly unique ways. Such as packaged goods—one-click theming and games—or data transfer—the baseball info.

24. **Don't be afraid to try different genres**. Successful content for the mobile screen is by no means limited to the comic genre. Drama, artistic and even action pieces are all possible within the 3-5 minute limitation. Stories with a clear antagonist/protagonist and simple (not stupid) plots will be most successful.

25. **Make content interruptable**. These shows must be interruptible. If the story or event is so complex that a glance up will lose the thread of the show, then it is too much. Loud noises, jostling and distraction should not be feared.

26. **Subtlety is not always a virtue**. Sometimes subtlety is confused with vague. Err on the side of plain and simple show and tell.

27. **Clutter Kills**. Nothing can kill a good show on the micro screen like a cluttered frame. The frame real estate is too small to clutter it with non-priority items. Details are good, but too many on the small screen will distract and hinder the story.

28. Remember the aspect ratio. Due to the ever-growing size of television, you can use letterboxed programming, but since a hand held screen can only get so big, the full screen must be employed to convey every bit of detail possible.

29. Don't get too far away. Distance conveys a lack of importance. Instead of looking for the special details and the beauty of a panoramic shot, the viewer sees a lo-res picture of something and loses interest. Keeping it close shows the viewer that every shot is important. Start close and base your shot progression around that starting point.

30. Don't forget the lo-tech. The video is going to a bunch of devices of different capabilities. It has to work on the lowest of lo-tech that can handle it as well as the best of the best.

31. Fast cuts may be difficult to follow. Because there may be many other things in the viewers line of sight, fast cuts may be difficult to follow and confusing.

32. Actors on-screen should not take up less than three quarters of the screen. Once they are smaller than that on screen, they begin to get lost in the frame and can no longer be distinguished from the rest of the action.

33. Bold san-serif fonts work best for text. Because there is a downgrade in resolution fonts can become difficult to read, keeping them large, bold, and avoiding flourishes ensures the most legible text.

34. Use slower camera movement. Elements of a scene are harder to discern on the micro screen. Keeping camera movement slow avoids confusion by allowing viewers to understand more information by viewing scenes longer.

ANIMATION

35. Use high contrast to identify and separate your characters in long shots. Long shots only work with very high color contrast, such as an orange fox running through white snow.

36. Test your video quality on the mobile screen before you go too far into production. Because of the smaller aspect ratio, sometimes animations will not look the same on a mobile device as they do on a computer screen.

37. Improvised skits are an excellent match to the mobile screen. Improvised skits allow for the rapid creation of low-cost content.

38. Viral advertisement is a benefit of creating media for the mobile screen. Because people tend to share short videos with their friends, your show can become its own advertisement.

39. Be careful of using thin lines in an animation. When thin lines are downgraded for the mobile screen they can become pixilated and decrease the overall quality of the image.

40. Be less subtle with animating movement. When viewed on a micro screen the characters will appear much smaller and subtle animated movements will be hard to identify.

AUDIO

41. Listen to audio using the final compression. Compressing the audio can change the overall sound a lot, so checking your progress with the final compression is important.

42. Ultra low frequency sounds are not useful. These types of sounds – generally associated with subwoofers – cannot be very accurately reproduced by headphones and are generally felt, not heard, anyway.

43. Audio can add to the picture things that may be difficult to show. With limited screen space, audio can play a key role in making viewers notice actions that may be hard to see.

44. Headphones are less forgiving than TV speakers. Because the sound is being piped directly into the viewers' ears, there is less room for error.

45. Mono isn't bad. If it doesn't take away from the story you are telling, mono will help keep file sizes down for quicker and cheaper transmission.

46. Pan sounds sparingly. Because the screen is so small, panning sounds too much can get confusing to the viewer. Think carefully about what the sound means in relation to the picture.

47. Be sure that dialog is ultra clear. Excessive compression can add artifacts to the sound, so it is especially important to make sure all dialog is crystal clear.

48. Some content may lend itself to the visuals being less important. In these instances, the audio will have to carry the story. Make sure that it tells a story as effectively as possible.

49. Simple can be better. With watching on the go, the viewer may still hear a lot of environmental noises. As a result, too rich a soundtrack may cause confusion.

50. Make everything obvious. Soft sounds may get lost, so make sure they're not important to understanding the story if they are used at all.
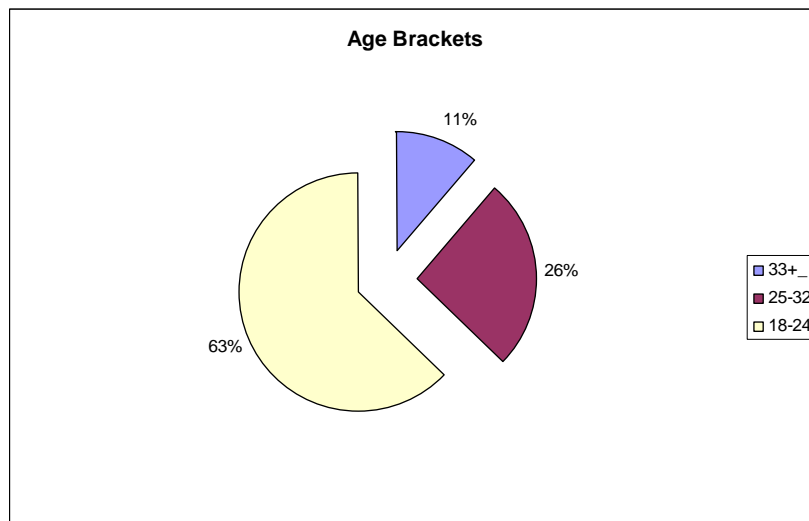
APPENDIX B

RESEARCH PHASE 1:

The first phase in research will concentrate on general questions concerning mobile devices and current on-the-go viewing habits.
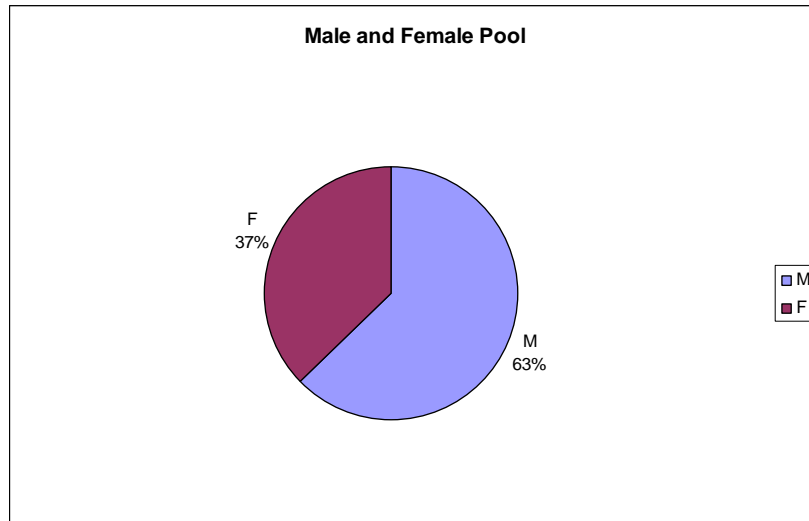
PHASE 1 QUANTITATIVE DATA:

Sample organized into standard age demographics:

Age Brackets

11%

26%

63%

- 33+_
- 25-32
- 18-24

COMMENTARY: Our target demographic for research is the 18-24 year old demographic. However, other demographics are useful knowledge as the mobile market expands.

Male and Female Demographics:

Male and Female Pool

F
37%

M
63%

- M
- F

COMMENTARY: We could have hoped for a larger female sample in the first phase. However, when we do our actual viewer testing, this will hopefully increase as we find more female populated areas.

Cell Phone Ownership in Sample:

Who Owns Cell Phones

6%

94%

- Y
- N
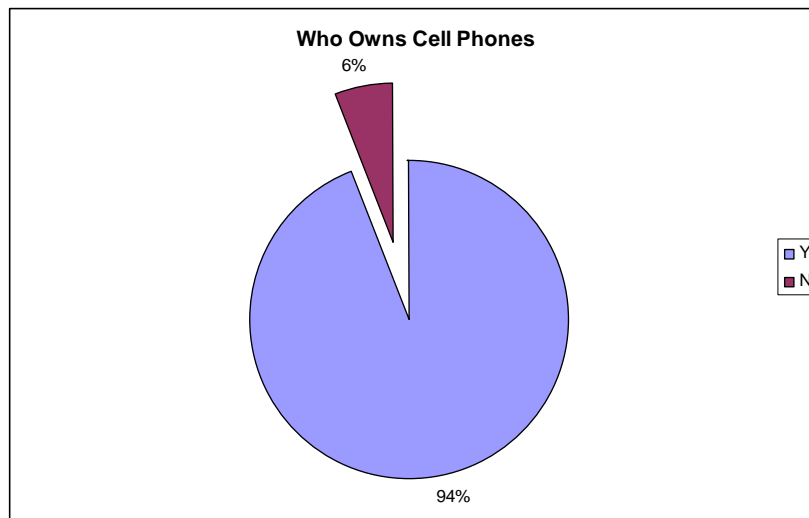
COMMENTARY: *Our thought process is that the mobile market will be mostly concentrated on Cell Phone entertainment rather than devices such as the video iPod. This assumption is derived from the fact that most people own cell phones and in several years, most people will have video capable cell phones. People do not have to go out of their way to purchase a device specific to watching movies. This luxury in the cell phone market will allow*

entertainment in the mobile realm to expand. Only 6% of those questioned in our phase 1 did not own a cell phone. This number will likely shrink as years pass.

Video iPod Ownership or Other Video Playing Device:

**Video iPod Ownership**

Y
14%

Y
N

N
86%
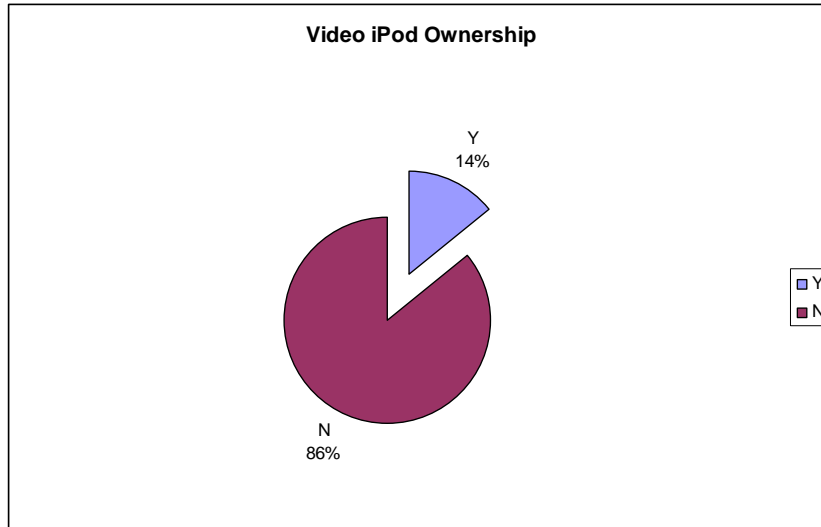
COMMENTARY: *As stated above, fewer people own video specific devices such as the new video iPod. While there is definitely a market in these niche devices, our assertion is that the market will likely be more defined in the cell phone arena.*

Age Demographic Breakdown of Females with Video Cell Phones:

Females with Video Cell Phones

1%
3%

18-24
25-32
33+
None

7%

89%
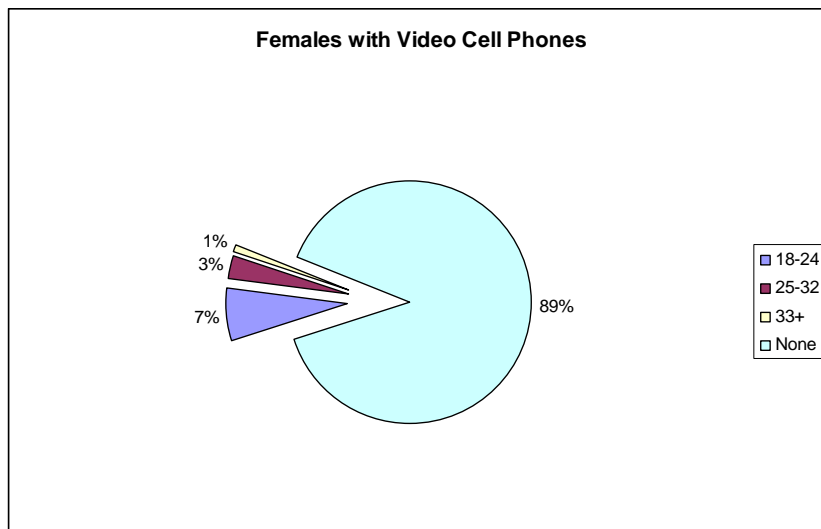
COMMENTARY: *In our sample, it indicates there is a lot of growth that needs to occur in the phone entertainment market. However, the 18-24 year old demographic is significantly higher than older age groups. Next time, we should include more questions about other types of content available on cell phones, such as wallpapers, ring tones, etc. and their purchase habits of this extra content.*

Age Demographic Breakdown of Males with Video Cell Phones:

Males with Video Cell Phones

12%

5%

2%

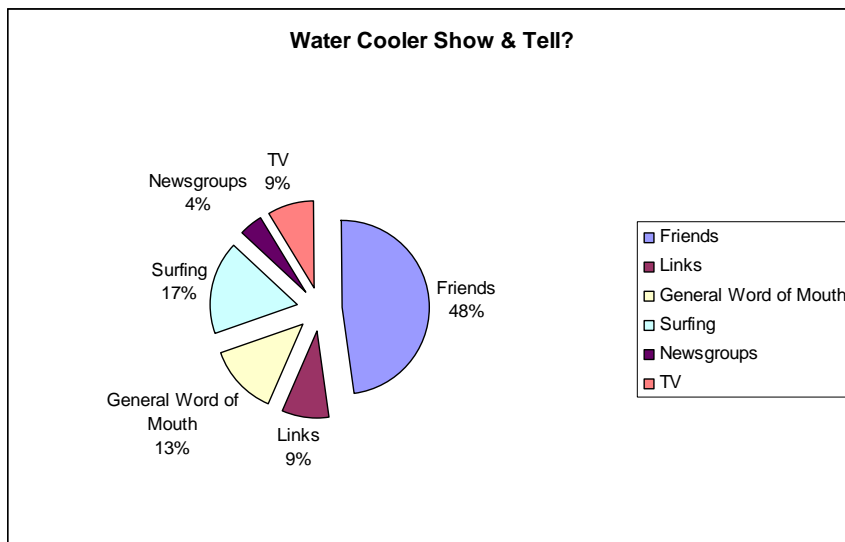81%
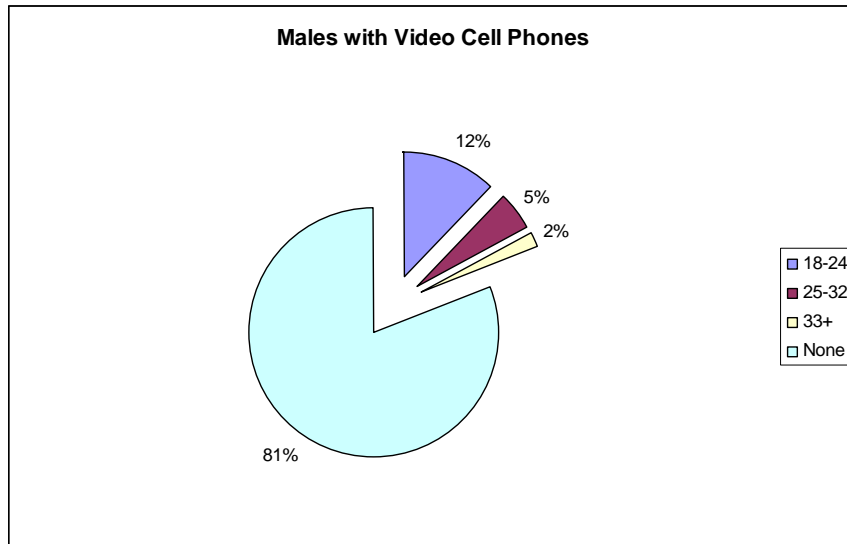
- 18-24
- 25-32
- 33+
- None

COMMENTARY: Based on our sample, the male demographic shows a much larger portion in the 18-24 brackets that have video cell phones. While this data is not crucially significant, it does indicate a larger trend in the 18-24 year old demographic to use high tech add-ons like video cell phones.

PHASE 1 QUALITATIVE DATA

Internet Viewing Habits of Sample:

Sites Visited	Frequency	Description
ABC, NBC, CNN, MSNBC (Major Networks)	1	Obviously.
Albino Blacksheep.com	3	Flash videos sort of like newgrounds.com
atomfilms	1	Atom's unique programming and distribution business delivers incredible short-form entertainment via a diverse set of technology and media channels.
Ebaum's World	5	**eBaum's World** features: funny videos, flash cartoons, college humor, flash games, office humor, hilarious videos, funny pictures, jokes, and pranks!
Fugly.com	1	Come in and laugh at funny pictures, movies, games and links. Check out our original chat pranks and victims. Get the worst horoscope ever.
Google Video	2	Collection of all types of videos via Google
Homestarrunner.com	3	Original flash content
Ifilm	2	Film portal and directory, with editorial information and links to over 5000 domestic and foreign Internet films.
launch.yahoo.com	1	yahoo's google video
Lonely Island.com	1	A group of aspiring film makers funny home videos.
MTV.com	1	Obviously.
My Space	1	Social Networking - videos can be added to personal pages
Random Sites (Based off Links)	3	Links to funny videos through emails or other websites.
You2.com	1	Search program similar to google.
youtube.com	2	internet broadcasting, the newgrounds of live-action video.

COMMENTARY: It is interesting to see the diverse sites people visit. Most of these sites typically serve the same purpose. Ranking highest on our charts, is "Ebaum's World" which is a collection of all types of content, animated, live-action, home videos, etc. It's basically an online version of "Real-TV" or "Xtreme TV." On another interesting note, most of the videos found on these sites have about 3-5 minute average length with their videos. Below is an example of how the sample found the sites they listed above. Our assertion is that "Water Cooler Show & Tell" takes place, where people show their friends the videos, which prompts people to look up the videos on their own time. Below, our sample is further indicating "Water Cooler Show & Tell" exists in some shape or form (Nearly half of all ways these sites are found are through friends).

Water Cooler Show & Tell?

TV 9%
Newsgroups 4%
Surfing 17%
General Word of Mouth 13%
Links 9%
Friends 48%

Legend:
- Friends
- Links
- General Word of Mouth
- Surfing
- Newsgroups
- TV

PHASE 2 QUALITATIVE AND QUANTITATIVE DATA

Feedback as of May 9, 2006 5:16PM EDT

Compiled feedback from 29 and Single Feedback Form…

User Statistics:
Average user age: 25.5 yrs old
Gender?: Male: 24 (66.7%) **Female:** 12 (33.3%)
Student?: Yes: 25 (69.4)% **No:** 11 (30.6%)
List of jobs/majors:

- Health and Phys. Ed.
- homemaker
- computer information systems & economics
- education
- Entertainment Technology
- ETC
- Computer Science
- Secretary
- Mechanical Engineer
- Research Specialist (Education)
- Comp Sci / Theatre
- programmer
- High School
- Resort Manager
- Public Relations/Journalism
- MET
- Hair Stylist
- comp sci/entertainment tech.
- Film Producer
- drone
- Project Manager
- Environmental
- Animation

Feedback Responses:
Without looking, please estimate the duration of the episode you just watched:
Avg: 5.1 min **Min:** 2 min **Max:** 10 min
Number Estimating Under 3 Minutes: 3
Number Estimating 3 - 5 Minutes: 24
Number Estimating Over 5 Minutes: 8

What viewing device would you use to watch this? (Please check all that apply):
Number of Responders: 36

- Computer/Internet: 30 (83.3%)
- Video iPod: 14 (38.9%)
- Television: 6 (16.7%)
- Video enabled cell phone: 6 (16.7%)

If you were watching this on a mobile device, where would you watch this type of programming? (Please check all that apply.):
Number of Responders: 36

- On a commute (airplane, bus, etc): 25 (69.4%)
- At home: 17 (47.2%)
- In the office: 10 (27.8%)
- In line at the store: 9 (25%)
- In the bathroom: 2 (5.6%)
- drinking coffee in the morning: 1 (2.8%)
- Friend's House: 1 (2.8%)
- with friends: 1 (2.8%)
- the content here is not my preference to watch anywhere honestly: 1 (2.8%)

Would you share this video, or other videos like it, with your family and friends?
Total Responses: 36

- Yes: 28 (77.8%)
- No: 8 (22.2%)

If yes, how would you share it? (Please check all that apply.):
Number of Responders: 36

- Send a link via email or instant messenger: 22 (61.1%)
- Physically share: 13 (36.1%)
- Put it on MySpace or other social networking site: 9 (25%)
- Send a video message on cell phone: 5 (13.9%)

Please identify the main character's name. (If you aren't sure, write "Don't know."):

- dani
- dany
- Tom
- dont know
- Danny, and "One Nut"
- Dani
- Danny
- Don't know
- Who was the main character?
- Danny (Denny?)
- Dont know. Distracted viewing environment.
- Danny
- Don't know about the female. I think the male was Danny.
- Danny
- Ive watched this movie in the MPR like 2months back… am taking the survey today in a cluster, and so the volume was muted [I must say that i still enjoyed it !!]
- Danni (from the song)
- Danny
- he had a name?
- Danni
- Thomas
- Dani
- Dani
- Danny
- Don't know.
- don't know
- Paul
- Danny
- Thomas
- Thomas and Dani
- Danny and Thomas
- Dani
- Steve
- Danny
- Dani

In a few words, please describe the female character:

- kind-hearted, thoughtful, romantic, goal-oriented, attractive
- a bitch
- pretty, engaging, easily heared
- Looking for love in all the wrong places.. hot
- She came across as always being a little skeptical about dating men and that this incident sort of reassured her feelings towards that.
- I wanna do her
- normal pretty girl
- She had skinny eyebrows and it grossed me out when she said ball. Also, was really ugly when she wrinkled her brow.
- Looking to find a guy, not having much luck.
- Seemed kind of hard to satisfy in any regard.
- A little snobbish. Her expectations are a bit unreal. Cold.
- pretty, average girl about to get married -- is she dating around b/c she is getting married or is she looking for a husband?
- She was pretty, and acted well! She had apt reactions on her face!
- Hot!! Has attitude and is just so loveable. lol
- cute, seemed like she was set up on the date, but had seen the guy before, she was acting like she was better than the guy and not really willing to give him a chance, was almost blase about the whole thing
- Guarded. Nervous.
- Good looking, smart
- She's 29 and single. She is looking for a husband but isn't being realistic about it. She wants a rich guy, and she has kind of given up on marrying the more attractive men she meets.
- Good enough to eat
- She's 29, single and worried about dating. Her expectations are average. Her reaction to the situation was to be expected.
- 29 and single
- she is nice when speaking
- Tall, brown hair, attractive.
- white, blondish hair, red shirt, brown eyes
- unlucky, unfortunate, honest
- Weird, clueless.
- I would say she is pretty with an expressive personality, and a good body. I remember HER name because of the song, but I can't remember the guy's name.
- desperate
- pretty and probably fairly popular
- Danny is a pretty woman looking for a man and is semi attracted to Thomas because he is rich
- She's 29 and single. She hasn't had much luck with men in the past, so she tries to branch out and meet new types of guys. Despite her open mind, Thomas openness turn her off. She ends the date before it really begins.

- sharp, sympathetic but self-preserving..
- 29, single, trying to find a boyfriend/husband. I don't want to be harsh, but she seems sort of shallow…dating outside her comfort zone just because the dude is rich. She's okay with his creepy song but balks at one ball? Oh please. Real women would
- somewhat full of herself; athletic built; attractive; thin angular facial features; smooth skin; very naive to what she "thinks" she is looking for; annoying

Would you want to see a second episode? Why or why not?

- yes, its entertaining, funny, and dani is the type of character you want to see succeed
- Sure, I want to see it because my friend made it.
- No, it was akward.
- yes, see what happens
- Sure… it was entertaining
- Sure - maybe they do end up going out on a second date? :)
- yes, this seemed like a pilot but could definitely get really funny as characters are established.
- No. Unless it comes highly recommended as having grown I wouldnt be interested. The jokes were immature, and I dont mean low-brow. I mean they were ammaturish in nature. A couple made me giggle though.
- Dunno… if I didnt have anything else to do, sure, but the first one didnt really hook me.
- At the current juncture no, but if the show was altered to make it into a faux dating reality show following the female character as she tries to find love. But more often than not run into cases like Danny.
- yes, but i want to understand her better - why is she dating? is she a snob or was she just weirded out?
- Yupp! Bring 'em on
- YES!! DESPERATELY! I loved it!!
- Sure - it was funny. I might not go out of my way to see it, but I would watch it if it was there, or if I got it in a weekly email.
- Not really. I found myself not really caring about the female character. I found the male character more interesting.
- No because it seems like the episode is self-contained. How long would you run the same testicle joke?
- Yeah, I want to know what happens to her.
- Yes, as long as it's as funny as the first.
- Yes. It was a relatable scenerio anyone dating could see themselves in. Plus, it was great for a laugh.
- Sure. Although the best line in this one - the loneliest number - I saw coming because of the title. I wish that had been more out of the blue.
- yes. it was funny and has a lot of potential
- Yes, it was funny and interesting.
- no, not enough comedy to justify the pointlessness…
- of this short?, i don't think so

- No. Made me feel awkward, wasn't that interesting or funny.
- Maybe, if it wasn't about his ball. You need to have a space where I can put more comments about the episode, but I'll use this for now. The question asking me if I would share this with family and friends. I don't know if I would recommend it to my Mom o
- yes, to hear Thomas sing again.
- Yes, this episode was concise and amusing and I would expect the second one would probably be as well.
- Yes, it was amusing.
- Yeah. It was short and the situation was awkward, but it was really funny. More shorts about Dani's pursuit of romance would be entertaining, but if it carried on too long, it would get old.
- I really like the production and the short "head-shot" asides, but I really did NOT like the "testicle" bit. There could have been many other ways to take it and that was too obvious a turn-off. The guy was just too robotic and immature.
- Eh. No offense or anything, but it really comes across as a show made by guys about what they think a woman would want to watch, but in fact, it probably appeals more to men. Not all women who are 29 are desperate to get married and date creepy guys jus
- no - lead male character made me want to put a sword through his guitar, his vocal chords, and his one testicle female character - annoying to hear her describe her "preferences" in men

Viewing both of the above clips at default size, which do you find easier to view?
Total Responses: 33

- Clip 2: 22 (66.7%)
- Clip 1: 8 (24.2%)
- I can't tell a difference: 3 (9.1%)

Rate the picture quality of the above clip on a scale of 1 (poor) to 10 (excellent). (***Note: Please focus on picture quality, not production values.)
Average Response: 6.8

Rate the picture quality of the above clip on a scale of 1 (poor) to 10 (excellent). (***Note: Please focus on picture quality, not production values.)
Average Response: 7.5