Interview with Howard Brock - Post Maven

Dave: Welcome to the Elegant Workflow Podcast - A member of the Tech Podcast Network. Today we are speaking with Howard Brock – Post Maven. Howard, welcome to the Podcast.

Howard: Hello Dave.

Dave: Please tell us a little bit about your background and your history and the entertainment industry.

Howard: I started back a long time ago. I was in film school, got out and was editing film you know that stuff with holes in it - did music videos, dramatic films, a whole variety of things, documentaries and then eventually segued into editing on video tape and went back and forth on that for a number of years until I realized that I visited a friend who was packing up a feature film's trims that was literally a 20 by 40 foot room full of film cans. I went back to the project I was working on with 7 video cassettes sitting on a bookshelf and thought; yeah that's enough of that. I gave up these brockets and embraced the time I worked on clip shows and was at Entertainment Tonight when I first started. I had done a documentary about Cast of Fame while working on a tour of England it's just due for the show got cancelled by NBC. At which point, MGM decided to resurrect it in syndication and they had this odd notion that if they cut it in video tape they would save money. Unfortunately, nobody ever has done that successfully. I called up MGM in the attempt to wrap them some gear and they called me back and said, hey why don't you build us the gear and you have the show. Hmmm okay – since the chances of jumping over the fence and being able to cut it up a solid television series after coming at it from everything except that you have no experience doing that. It was an opportunity I couldn't resist. I built them a system. I won an Emmy. I started match frame with the same type of technology running out linear 3 quarter inch offline systems and then as the market evolved, and non-linear tape-based editing systems started to appear on the market. They bank out of beta or VHS machines match frames sort of segued into editing into a portable online system that were used by magazine shows. This is the beginning of the trend towards why do it twice, when you can do it once. Matchframe eventually grew into from a 2-editing systems to basically a full-blown facility on a 30,000 square foot building in Burbank with about 100 employees and bottle loads of rental systems and a full facility. I ran Matchframe for 18 years and then after a difference of opinion of my partners, left the company and then freelance for a couple of years and went back into the other side of the fence as a worker bee. I ran runway for a couple of years not long after that and then during the financial crisis in 2008, I became expendable like everybody else and I went back into the freelance world and basically I have been back in the man side instead of the supply side that last for a couple of years. Most recently I was associate producer on Anger Management which is the Charlie Sheen sitcom on FX. I was the associate producer on the back 90 episodes. We had 2 years to crank out 90 episodes which is double for normal sitcom load. We managed to do it with 4 people, no overtime and literally saved the production company millions of dollars.

Dave: And I love how the, cutting the TV show Fame, how it all that happened because it's so interesting, people die, they cut a major television show like that and yet you kind of fell into it and you saw what a great opportunity it was and you just embraced it and said okay I'm in.

Howard: Yeah. It was like one of those, you know, hey I'm going to open up this gate here on this fence so you don't have to go around this giant maze for the next 20 years. Do you want to

come in kid? Okay sure. I've been hitting everywhere except this for the last 10 years because nobody would let me come in, so yeah love to.

Dave: There's just so many of these situations that come up and if you're not ready to embrace it in the moment because you could have said, no I just want to rent you the system and who knows they might have said, well we don't really want to rent from you because we want somebody who's going to rent it to us and be an editor as well. It ended up working on so many ways and leading to a lot of other things. I would just always think that's interesting in people's histories, how these things, these opportunities come up and you have to just be ready to jump on them.

Howard: Yeah the trick for the hole is with any new technology is really a matter of, you want to push the envelope knowing that you're not going to break the envelope or make sure that if you, if there is a chance you're going to break the envelope you have another envelope that's standing by that's going to catch the contents. A lot of what happens in this industry which is you know, for an industry that's all about imagination and telling stories and embracing new thoughts creatively because as far as technology goes its somewhat, and I'm using somewhat in quotes, 'somewhat' hesitant to embrace any changes and part of that I think it's because its unfamiliar. Part of it is because the stakes are so high. It's a combination of fear and loathing I think. This is the way we've always done it. This is the way it works. This is the way I know if there's a problem I'm going to be okay. It's kind of like, you have to go downtown, there's a bunch of traffic, and do you want to take the freeway? Yeah, I want to take the freeway because I know where the offer is and I know it's going to be bad but at least I know predictably how bad it's going to be. Well, you know you could go this way. You can take public transit or you can take surface streets or you could probably take a lot of time off. No, I'm not going to do that. You know somebody's going, hey I got another way and I'm like, hmm nah I don't want to go, that's not familiar. Well it's same in Hollywood. The first goal is to not get fired – always the first goal, not to get fired. If the chance of getting fired is increased by embracing something that's new or different, generally it's both. Well turn new stuff or different stuff. You need a combination of the right people using the right tools with enough credibility and understanding of the stakes involved. You don't take these things on lightly and you have to have somebody who is willing to embrace that and support you to do it with the understanding that some mutual trust that's says, I've got your back, this thing you know even if it fails, we have a back-up. Nobody's hanging out in the wind here. We're not going to risk everything because we think it's going to work. We're going to do it this way because we know it's going to work and we're going to cover our ass just to make sure. Oftentimes, it's not but this is how we do it and this is how we've always done it.

Dave: I know that around Anger Management you came up with some very interesting workflow options as you mentioned earlier, to do and basically 2 years whereas most shows do it in 4. Can you tell us a little bit about that workflow? Some of the things that you implemented that nobody else was doing it the time and maybe even today nobody else is doing that type of workflow?

Howard: I don't know if anybody else is doing everything that we did. Some people, some shows are doing parts of it but the situation on Anger Management was a 10-90 show. It's a business model that's used by Deadmark Mercury was actually a movie called a Tyler Perry model until I used it on something as a Tyler Perry show. The idea was that the syndicator itself 1o episodes to a network at a discount with the understanding that if it hit a certain ratings target on the first 10, the network was obligated to buy 90 more episodes. The goal here is sort of a win-win situation for both the network and the syndicator because the goal was to, for the

network well; we're getting the show for half-price or some reduction of the normal license fee. For the syndicator and production company, the goal was, hey we're going to have 100 episodes included in the syndication and make our money so we don't have to worry about the vagaries if the show's going to be renewed and such – and it was sort of here, I'm going to remove, it's a risk and reward sort of a model. I'm going to remove your risk and you're going to get a reward or vice versa, you know. Anyway, the deal was the way the show was structured, we had to crank out basically 45 episodes a year – that's like almost an episode a week and that's, normal sitcoms, you know 23 episodes, 22, 23 so this is literally double the normal volume. The normal price for the schedule that allowed for things to take a little longer have been removed from the equation so the goal was, you want to be as efficient as possible because if you're not, you're going to get behind very quickly and there's not much, really any chance to get caught up. Not to mention the fact that you know, if you're doing 90 episodes over 2 years, that's kind of a long slug and the opportunity you have to say, boy this is really dumb. You're going to have a chance to say that 90 times more. The first trick was how many parts of the process could we remove that were no longer necessary. It was sort of like why do you cut, why are you cutting an offline resolution? Tradition? Not a good reason. So what's happened now is we finally got to a sweet spot where you could cut a 4 camera multi cam show in DnX 175 and not have the computers choke, not have the storage needs be so horrible that they weren't affordable or the bandwidth needs so all the risks that you couldn't play the stuff out. There's a part where technology gets to a part of like where, wow this is really sweet, this is like the way it should have been all along and then somebody moves the bar and goes, well okay yeah great no w let's do 4K – oh damn it. It's like when they have 16mm news film cameras that got to have 14lbs and then it took another decade when they went to ENG before they got ENG cameras that were down to 14lbs. Just when you get close, they move the goal post and go hey, new rules, see if you can meet it again. I just got there. We have finally got to a point where we can edit multi cameras in DnX 175 without the computer choking so that was good. We finally got to the point where storage prices were affordable enough that we could handle 32 terabytes without going crazy. The other thing that had happened on the first 10 episodes we had the producer told me about the system that they were thinking of using that recorded file-based recorded correctly to disc. He expressed some skepticism as to doing, using it that way. He was going to go more of a card-based system that a lot of sitcoms were using at the time which require ingesting and transcoding material to get it off the least efficient editing codec possible. We recorded great quality video but unfortunately a huge cost to processing power and complexity because if you want to get good pictures in a small space, it's going to take some effort; that was the technology people were using at the time and I'm going like, wait a minute, if we're shooting, we would shoot 2 to 2 and a half hours of material a day with 4 cameras so that's 8 to 10 hours of material per day. If you have to bring that material in real time, there's 8 to 10 hours before you can even start editing. If you bring it in half time or quarter time, you still got at least half of a day spent getting your stuff ready so you can edit, we use Script Sync as well so you know the sooner you get the script sync, the better and the sooner you can get it to, well first off, the sooner you can get it into the port of, into the AVids you can edit with the better. Why waste a bunch of time you know playing back stuff when you could have just grab, if you could have. We used this different system; it had some limitations at the time. It was sort of a proof of concept that it could work. The problem was that system at the time was supposed to be able to talk to a unity. It did but not in the bandwidth requirements that we need because the pipe wasn't fat enough with all the stuff that was going in it so it basically choke. We ended up having to do a work around with local storage than copying stuff off. It also didn't record 10-bit at the time, does now so that was a limitation. It was sort of a, alright this is a good idea but it's not ideal because there's a couple workaround that's less than appealing to us. Between the first 10 episodes and the back 90, I went to NAB, stumbled across Cinedeck and Cinedeck basically were the other product of the market that had the same sort of feature

set. There's only 3 products in the market that will allow you to record DnX, OP Atom files directly to an ISUS unity of the products. One of them does not do 24p, that makes 2 products so it was like one of those, oh look there's all these different proud choices, no there's only 2 that's going to work and you already tried one, so what does the other one do? What the Cinedeck did was it was able to record 10-bit. It was able to talk. It was able to record simultaneously to both the ISUS as well as local storage. It could record 2 codecs at a time from 2 channels in a single unit - 2 signals, 2 codecs for each signal to 2 different locations for each signal – whole bunch of twos there. What we ended up doing is we brought one in, we did some tests, we want to make sure it was going to work because as always it is very embarrassing if it doesn't when you, you know, you want to know it's not going to work before you get to the location to deploy it. We did some test, we were fairly confident it was going to work – implemented the Cinedeck of the last 90 episodes. Basically, the way the workflow work was 4 cameras would be fed into the Cinedeck. Cinedeck would record DnX 175 directly to an ISUS as well as local SSD drives that were used to this setup just as a backup. The audio was embedded. We had 8 channels of audio on one camera. We had a 2 channel mix on the other 3 cameras since there was no particular need to record 8 channels on 4 cameras. We also record quad split. We had a 3rd Cinedeck that was sort of the hot spare which is kind of a joke because we never used it as a hot spare because we didn't need to but we ended up using it as either if we have a 5th camera or we had to play something back in particular, we could use it for today. We also used it to record a quad split to H264 and that fed the light iron server and the light iron server fed iPads on the set with any take that was completed. Once the take was done it would show up on the iPads if somebody wanted to look back on a scene or take and will use something or look at how the quads split or any other reason which saved a tremendous amount of time so that people weren't going into the recordist going, can I see that scene again? Can you play that back? You have it. You just have to stop watching the baseball game. The crew embraced it because I can tell you the majority of the time they're not watching the playback on the iPads but they all had iPads, they're all fired up because the Cinedeck record the proper format for the Avid. Most of the file systems out in the market record QuickTime movies. The trouble with QuickTime movies, that's not the native format that Avid is going to work with so what has to happen is, it's kind of like using a soda fountain where you can either get a can of Coke that's already mixed or you can go to soda fountain, you can have syrup and soda water mixed together to get you the equivalent soft drink. So imagine that you got a can of Coke and you go, 'Here Avid. Here's a can of Coke' and the Avid goes, 'I kind of like syrup and soda water, can you separate it for me?' That's going to take some effort as opposed to, 'Here's a syrup and soda water Avid, and how do you like it?' 'That's fine, I'll just take it the way it is, no problem. The reason for that is that Avid uses, keep in mind that the word standards is always a plural because you can't have a standard, that would be too simple. With MXF, it was just a file exchange format. There's 2 type of MXF files – there's the 'I stuff everything together with the audio and video together just like I would on a tape machine' and then there's the other method that says, 'I'm going to keep the audio and video separate because there's no telling what you might want to do with them later so rather than having to separate them later, I'm just going to separate them on the way in and I'll put them back together on the way out if you need it which is the Avid method which kind of makes sense when you consider the more often than not your audio and your video are coming from different sources and going to different locations or destinations we move on. From an editing standpoint it makes perfect sense if you're a camera manufacturer or somebody who use to make tape machines where you already have stuff together, that's not really the technology you need to embrace because you didn't have to so somebody goes, hey we've got an MXF to edit that puts the audio and video together and go, great fine, got it all solved, know how to do that. So the first challenge is to find a recording format that gets you to where you want to be as quickly as possible so what the Cinedeck do is they basically make MXF media on the fly so that when it ends up n the Avid it's all set to go. It

basically creates MXF files, creates an AAF that bases the metadata that goes with the stuff. You can also setup the Cinedeck to indicate the scene and take, the production number and the camera all as part of the naming scheme for each clip. When the clips come into the Avid which is literally moving in from one directory into another because the Cinedeck record them in their own separate folders per take because that's how they have to keep track but all we do is we can say, okay grab me all the MXF files that are over here and move them into this directory over here. It literally is moving up from one directory to another in the same drive which takes no time at all and then goes find the AAF files that are in there also. Okay good, move them over here; we're going to drop them into the Avid. The amount of time to get dailies when you do this sort of stuff is about a minute total, max. Actually the longest part of this thing is where you have the Avid index the files so when you're doing a new show takes literally a couple of seconds when you're doing the last take of a 2 and a half day show, you know it might take 30 seconds – horrible, horrible wait to have to wait 30 seconds for your dailies. The advantage that is for one thing the production managers could call us up and say, alright they just wrapped that scene, and do you have the material? The system would load it up and say, yup I got it, and it goes okay strike the set. You were waiting until the next day dailies to show up and strike the set. It was literally they would be striking the set 10 minutes after they finish the scene. Wow, that saves time and money. The fact that somebody wants to see something, they didn't have to wait until tomorrow to know if it was alright or not. It was a lot of efficiency in terms of getting stuff done quickly. The thing is, once you basically, once you got it into the Avid and it was indexed, you put them in a bin, you sort it and you do a multi-group edit, the basic group of all the takes and they're already named correctly and then literally the system will start going through script sync and start marked stuff up. If it was a short scene you could literally start cutting it 10 minutes after you were done shooting it – which is efficient.

Dave: Very efficient - and there was never an issue with the Cinedeck recording rate into the Unity? You did it into the record?

Howard: The camera package came with HD cam decs and the camera vendor, you know wasn't, he was going to get paid for them no matter what so they were there so we always roll tape. We had I think 180 tapes left over from the first 10 as were going through the prep for the back 90 they're talking about going out and buying you know, a linear $25,000 worth of tape for like the next 10 episodes - and I said, why are you doing that? They go, well we need it for back-up. I went, no, you don't. This is like, you need that in case. I think we can just keep re-using these things you know; we're only using them just in case. We'll just, we'll have them around for just in case. We won't use them and every time we finish a bank of shows, we'll go out and get them evaluated and figure out any of them were bad and retire them and go on. So we ended up using that, those original tapes for the first 10 shows for the back 90 and I think we lost, I don't know, maybe 10 or 15 tapes deteriorated but we sell them if ever we use them. I would be dishonest to say we never used them but I could tell you the amount of titles that I can probably could count on one hand where there was like - ooppps we should just go to the tape now. It's nothing in retrospect that couldn't have been solved in production at the time but we didn't have to worry about that problem which makes you know, it's another way of making these sets of workflows more successful. As long as production is never impacted, nobody's ever going to be saying anything like, I don't know that we lost time - no we didn't. Never.

Dave: But you actually saved them time because they were striking the sets and building the next sets and not waiting. You add that up over 90 episodes and I'm sure it's a significant time saving.

Howard: Oh yeah, oh yeah, tremendous saving in that – because we were editing in 175 every time somebody would ask for like a promo piece or a clip or any other piece of material that needed to go out before the show was finished. We just spit out whatever we have from the Avid, use it for file-based thing that we could just literally spit out what we had to do with it you had to go back, go through any effort of operating any material or dealing with anything other than what we've already had so that saves time. That became a, here put that together now spit it out okay, which is a lot easier than hey, put that together, now oppress it, now spit it out so needless to say we never had any linking problems on that because we didn't have to deal with it or we imagined it was simpler. The vendor that we used for the Avid systems was somebody called J Kent who I worked with in the past many times. They know enough about the production and post production of the show to make sure those things didn't get out of hand. We did some extensive testing with the throughput on the ISIS to make sure that we were going to have enough bandwidth. We had an editor cutting multi-cam on a system with a multi-cam. There was a symphony in house that was used for online work that was working in multi-cam and we had a Da Vinci Resolve in-house that was for color correction and we had 4 channels of Cinedeck recording all going on. You know you added up that bandwidth it was an excess of 500 megabytes per second I guess. The problem is you can't get that throughput with one chassis. The studio required us to go out to multiple vendors to get bids on this thing. Typical, I understand. You want to make sure everybody stays honest. So the bid went out to other vendors and the other vendors all expect a single chassis unity because then there was 32 terabytes. We put 2 terabyte drives in there and the 16 slots, there's your 32 – no not going to work.

Dave: It's not enough spindles. It's not possible.

Howard: Exactly, it's not enough spindles but you know, 2 different rental companies who mostly do offline work didn't pick-up on that. They never really did the math. One of them was supplying Cinedecks and they still didn't do the math so I was like, you know it's kind of important to do all the math to know how all the stuff fits together, to know if it's going to work or not. That another critical thing if you're trying something new or better and different, you better make sure that the people you're working with are not clueless because you could end up with unintended consequences that would be less than ideal.

Dave: I love the idea of recording rights at the Unity and I think its genius because part of what a lot of people do right now is they'll record like you said, to one device with the wrong codec and had to put it on another system so it's a transfer, it's a transcode, all that stuff adds up easily to a day of loss productivity. Nobody likes that. The assistants don't want to sit there and watch files copy. I think it's a testament to you and your team because you had no overtime. I mean that's huge.

Howard: The idea was you wanted to spend more time on making the show good and less time in doing things that could be done hopefully more efficiently using a more time efficient manner. Oftentimes, when it comes time, you get in a situation where there is a budget crunch, the idea is to work harder or faster or you know, get something out of the equation instead of in this case, we went a different direction, it's like we're going to spend a little more money over here – I was like – Ha! But really going to save a lot of money everywhere else and here's how we're going to save it. Like for example we didn't have to have a second assistant digitizing material because you couldn't do it with only one. If you got one assistant working 8 to 10 hours a day digitizing material in real time, that doesn't leave any time for script sync or organizing or spinning anything out or doing anything else that an assistant has to do. So now you got

another assistant and because you've got, if you're coming out of tape machines you got 2 Aids that had tape machines on. That cost alone is more than the cost of the Cinedeck cost so you know I started like, well we're going to take this money out of here and apply it over here and now we're on a wash. Okay well where are our efficiencies? Well you can strike sets instantly. You can playback stuff on set for an audience without having to go out and prep it other than just having on a server and hitting play. You can, you're not taking time to have to rename every clip because you're already coming in named correctly. You're not taking any time to do oppress onlines. You're not doing out to do onlines, were doing them in-house. You're not going out to do color correction doing that in-house because we were doing the onlines in-house and the color correction in-house. Obviously we didn't have to worry about scheduling time with a facility getting in. We didn't have to worry about sending somebody across town to look at something and we didn't have to worry about, you know if it took longer to clean up some stuff that was left on set on production, it's like tape marks on the floor, reflections on windows, mike booms that drop in shots, bags under an actresses' eyes, flies on the set – any number of other things that are like, I don't know if we have the time and the money to spend at a facility doing that. It was like – no, do it here because we could. We were able to spend much more time making the show better so with our efforts, our labors will reflect it by what was on the screen as opposed to what was on somebody's bottom line.

Dave: Do you think this will be the future? You've already seen this – there's a lot of rental companies that bring in a Da Vinci, you know, they bring in everything they build a little post facility like you guys at the end of the show but do you see if people embraces this could be how things are done.

Howard: First off you have to find the sweet spot of efficiency based on what your needs are so if you're coming –this was a 4 camera block and shoot show that didn't used a switch speak because there was no audience that only needed to be delivered in high def. We had the technology that finally reached the level of capability and affordability to make it happen so we didn't have to worry about offline, online. We had the capability of doing stuff in-house because you could now so that's like one of those places where all the pieces come together. You go, okay sure why not, we should do this. Going forward, now, there is especially stuff that goes on streaming services that requires an actual 4K delivery. The stakes have been raised. Your storage needs have gone up by a factor of 4. You bandwidth went up by a factor of 4. Your technology has not increased by 4 times the last 2 years. Ooopps.

Dave: But it's also crazy on a block and shoot show to be shooting 4K or you're really going to see the difference.

Howard: No. I know Fuller House which is a reboot of Full House that's being done for Netflix is being shot on 4K as a block and shoot show because Netflix requires a 4K origination because 10 years from now, somebody's going to want to crank it out and go, oh excellent. Were back to where we were 15 years ago when people were starting to protect for HD, you know it's like you go well that should do it and then somebody has to raise the bar again because if you don't, manufacturers will have a very difficult time sustaining a business model that says, people are just going to buy replacements. We saturated the markets – no, that's not good, what can we do with this stuff? Well let's see if we just double it a little bit or sort of make it or the way it works half fast the way it exist now in HD, we can have 3D, how's that? Throw that up on the wall then fails miserably and they go, okay what else do we got?

Dave: Yeah let's do 4K, let's do HDR. I'm waiting for the first sitcom in HDR. HDR is interesting and for the listeners who aren't aware – high dynamic range – you have a much better contrast ratio and the pictures actually do pop. I mean I've seen the demos, it's amazing.

Howard: The window doesn't look like its white. It actually looks like this bright light coming through a window.

Dave: Exactly, but on the other side, do I need that on a sitcom? Will Fuller House be a better show because it was shot in HDR? I don't know. I don't know if creatively it's going to matter.

Howard: There's an unintended consequence of this. You increase the chances of the existing workflow bottle to being continued. In other words, somebody goes, well we can online and not have to work it off. We can work in online resolution and not to do offline. We could do an in-house. Whoa how about 4K, it's like; okay good we can go back to the old model. We can go to you know, we can do the offline-online model. We can go to a post house. We can do all that stuff because that's what were used to anyway so that's much more pound able and acceptable because we're basically talking the same workflows and technologies that were comfortable with and were just making it with bigger files. Okay we can do that, that's much more, that's almost more poundable and more comfortable to people than saying, how about we just take out all these extra steps that you don't need anymore. How about we just raise the stakes so that we keep using what we have? Oh okay, that's a thought so when, if you go to an executive and they say you're going to protect your assets in the future and you're going to not, it's not really going to cost you anymore as opposed to you're going to have an asset you can generate for less money now. Sometimes there's a tendency to keep things going the way they've gone in the past especially if you can put some collateral reason doing it.

Dave: Well it comes down to the old saying, nobody got fired for hiring IBM back in the day and it's the same thing with this, nobody's going to get fired necessarily for keeping a model that's worked for all these years. The one hours now they have to adopt a lot more of this technology because people are expecting visual effects. They're expecting there will be like many movies. Things are not as caught up around the block and shoot shows. I mean they still kind of feel the same as I Love Lucy back in the 50's in a lot of ways. You have the laugh track –creatively there's a certain thing about them and that doesn't put down what they do. Some of the writing is really great and I enjoy a lot of the shows but I think it's a certain cookie cutter way of making them.

Howard: It's a formula. I mean there are a lot of variations out of it; you know it's like a cookie. Well there are a lot different kinds of cookies out there. You may want macadamia nuts or walnuts. The advantage of a block and shoot sitcom is that you don't have to worry about shooting raw because the cameras are supposed to match each other. You don't have to worry about, there's a lot of things that happen on single camera shows that aren't really required on a block and shoot show. You know, block and shoot shows primary goal is have 4 cameras get the action. Try not to make it look like it's so flatly lit like it came out of the 70's. Great moving that along. You know there's still takes a lot of work to make all that happen so I'm not trying to diminish that. You're working towards shooting a half hour show in 2 days as opposed to shooting an hour show in 9 days with a single camera, the stakes are different. The other thing is, I'm going to circle back to a question you asked a while ago about why more people aren't doing this or if this is going to be the way of the future. I think part of the reason that things work the way they do is in a lot of ways you're sort of dealing with, I'm going to use the term and then I'm going to dial it back, you're kind of dealing with the least common denominator. In that, not

everybody in the production process is the most technically sophisticated. Not everybody in the editing room is the most technically sophisticated. There's no Walter merge saying or at least I think it's a Walter merge saying, I said it enough it should be true by enough. There's 3 qualities that an editor needs: storytelling, organization and technical skills, pick any two. So a lot of times especially with an assistant, who wants to be an editor, well I got the storytelling and I got the organizational skills. The technical skill is not necessarily their interest. It's sort of a means to an end so when you put in any workflows or anything that requires some degree of technical expertise or knowledge and the people who are not inclined to go into that direction. You're fighting an upheld battle. Fortunately on either management they had, started with the producer who's willing to embrace doing things more efficiently, that was key. That producer was not afraid of the technology and you know understood what we were doing and how are we doing it so it wasn't like, I don't want to know about this. It was like, oh you knew it, okay where the pitfall? Here it is, okay what are you doing about that? Doing this, okay good so that's the first part. The second part is we make sure that the assistants were very strong. They understood everything they needed to understand in terms of how stuff works and the best practices and why we were doing things the way we were doing things. In a lot of cases, they would come up with things like well why don't we do this? Okay that's a good idea so, were all pointing in the same direction. Oftentimes on shows especially with larger crews, you can't always get all that many people going in the same direction at the same time., You have to get people who have the requisite skill set in the right place at the right time – and there's a lot of people out there and if you don't have a critical mass to do it or you don't have a supporting infrastructure that allows them to do that. There's any number of reasons why it doesn't happen. You know it's almost, in a lot of ways Anger Management was sort of like a perfect storm like all the right elements come in together at the same time that allowed us to do the stuff.

Dave: What is your definition of an elegant workflow?

Howard: I'd say that the most elegant workflow is the one that gets you from point A to point B in the most efficient manner possible. Any extra steps that are not necessary that can be eliminated all the better. It's simply if you got a choice between cramming more stuff through a small pipe by making everybody work faster because you have less money or you can have everybody work, less crazy, get paid more money and be rewarded for their efficiency. I'm always going to go for the, yeah this is going to cost less overall approach and you know by not having people work harder. You want to have people work smarter and that's what we did on Anger Management. It was really a question of, how can we do the best job, not beat the brains out of the staff to get that to happen. You know have everybody come out at the end of the day, going, yeah it was cool, that was a good experience, and we liked that. The show came out well. We got paid decently. We didn't have to beat their brains out because we have an efficient system that allowed us to take a lot of the inefficiencies out of the system to make things happen faster, better and quicker. An elegant workflow would be faster but it's cheaper, pick all three. Sometimes that's a challenge but ultimately that's an elegant workflow, faster, better, cheaper. No compromise.