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## Challenges in the Production of Innovation Content for Engineering Artisans: Case Study of Media Producers in Nairobi, Kenya

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### **Abstract:**

*Media producers in Kenya struggle at producing content for innovation in the digital television platform. The researchers, therefore, sought to examine the challenges and efforts in place for media producers to produce innovation content for engineering 'Jua Kali' (hot-sun) artisans and whether engineering 'Jua Kali' artisans can access the innovation content. The study was anchored on the pragmatic research philosophy. The study employed a mixed methods approach and a multiple case study was the research method. A sample of 60 respondents was studied. Data was generated through survey questionnaires and interview guides. The findings showed 68.9% of the engineering Jua Kali artisans found it difficult to access innovation content. Media producers also cited an irresponsive market to audiences and extra television relations hindered the production of innovation content. It is hoped that these findings will encourage the production of interesting, innovative content, from media producers and that engineering Jua Kali artisans will benefit from the findings.*

**Keywords:** Media producers, challenges, access, innovation, knowledge, digital television, Jua Kali

### **1. Introduction**

Viewers no longer solely want a passive experience with a TV programme in their front room. They want to watch catch-up TV on a laptop, download a phone app on the move engage with content on a tablet or talk about their experiences on social media sites. They want different experiences on each platform, different flavors of content, and they want it all on their personal schedules! An 'access anywhere, any time and on any platform' the consumer is having a profound impact on broadcasters, content owners and post houses – and they need to radically re-think how they set up and integrate their workflows and business processes (church 2016)

While it's clear that a multi-screen environment brings a wealth of opportunities for content owners, it also brings many challenges. Never has the phrase 'content is king' been truer. But with an explosion in content and platforms to view that media on, content owners have to fight much harder for the consumer's attention. The winners will be the ones who have a strong brand identity, who can remain relevant and adapt best to how consumers want to engage with their brand. The quality of the user experience and the relevance of the content will ultimately determine who wins this battle of the eyeballs (Church 2016). For instance, engineering artisans who are self taught in engineering should benefit the most from customized innovation content that will benefit them as niche audiences. In other words, consumers should benefit to the point of having customized content in accordance to the audience needs.

### **2. Literature Review**

Traditional broadcasters have had to re-think their business models as ad revenue is now dispersed across so many more channels and platforms diluting their traditional revenue stream. They cannot solely rely on TV advertising anymore and have to adapt to find new revenue opportunities. This fast-moving, multi-platform landscape means fundamental change for broadcasters and post facilities. It dictates a better thought-through and more streamlined production process. No longer can media owners simply create a one-hour programme – the new media landscape demands multiple versions of the same thing (church 2016).

Whereas once the mantra was 'create once, watch once', it's moved on from 'create once, use anywhere' to today's 'create once, version anywhere' environment. Consumers are becoming more demanding and have higher quality expectations from the media they interact with. It's not just a question of repurposing a piece of TV content to fit a mobile phone screen. Consumers want a different experience with each piece of media depending on when and how they access it. So broadcasters and post houses are faced with a conundrum - the amount of production effort has increased, specific viewership has gone down (although aggregate viewership is on an increase it is now spread over many more outlets), and budgets have been squeezed. They're forced to do more for less. This means they have to work smarter using more adaptive and collaborative workflows (Church 2016).

Chazelle (2015) mentions that, finding content is still as challenging as ever, she states that finding content one wants is difficult but it is much easier to find content everyone likes. That's one of the major findings from Ericsson's TV and Media report (2015). Others

include the rise of mobile and streaming, the reality of “cord-nevers,” bingeing becoming the new norm and the emergence of new forms of content. Half the linear TV viewers questioned confirmed that they “can’t find anything to watch on TV at least once a day.” The figure climbs to 62% for those 35 to 54. Once in front of the screen, 40% viewers still turn to the TV guide, with only 29% of those satisfied with what they find.

According to Ericsson’s TV and media report (2015), those consuming non-linear TV are equally dissatisfied with what they’re finding when it comes to content. Many feel that the current crop of recommendation features is neither intelligent nor personal enough to meet their needs, to surprise or inspire them in their choices. In short, “There’s still nothing to watch on TV!” To help things change for the better, 31% of those surveyed would be willing to provide personal information in exchange for a better viewing experience with content recommendations based on their viewing habits and demographics. Young people are not only more likely to give their personal data but also more confident (naive?) in the integrity of their TV operators, with 50% saying they trust their data will be managed responsibly and securely.

### 3. Research Methodology

This research adopted the pragmatist research paradigm. Pragmatists view knowledge and the world generally as being both realist and relativist (Robson 2002) Consistent with this paradigm, the research approach is mixed methods. Subsequently the approach was carried out in accordance with the multiple case study method, as explained later in this chapter.

In line with the pragmatist philosophy, the ontological position which is about the nature of reality is that reality is constantly renegotiated, debated and interpreted in light of its usefulness in new unpredictable situations. There are different ontological perspectives on the nature of reality. Subsequently, in line with the pragmatist philosophy, the epistemological belief which is about the best method to use to study the reality is that the best method is the one that solves the problems. Finding out the problem and solution is the underlying aim.

As explained earlier a mixed research approach was employed in this study. This is where both qualitative and quantitative data are used to give an all rounded perspective of the phenomenon being studied (Johnson and Christensen, 2008; Saunders, Philip and Adrian, 2007; Johnson and Onwuegbuzie, 2004). There are different strains of mixed methods. Creswell (2009) discusses about the sequential and concurrent approaches. This study was anchored on the sequential explanatory strain of mixed approach. The mixed research approach was selected for its value in research as described by Creswell and Clark (2007, pp. 9-10), It provides strengths that offset the weaknesses of both quantitative and qualitative research.

The research method used in this study was a multiple case study. It is a process of research in which detailed consideration is given to the development of a particular person, group, or situation over a period of time. A case study to begin with may include a single person, a group of people, an organization or an institution. Some case study research may involve the research of a series of cases or more than a single case. In this study, the researcher looks into more than one case, that is the issue of Jua Kali engineering artisans as audiences and media producers for cross validation making it a multiple case study. It is more like doing multiple investigations (Robson, 2002).

This study was carried out in Nairobi, Kenya; it was focused on two political sub counties which are Makadara and Kamukunji. Nairobi is a metropolitan city. It is home to many people who have migrated from the rural to the urban areas in search of employment. The majority of these people who cannot find formal employment find it in the informal sector, which is what is called Jua Kali meaning the hot sun. The study population includes media producers who have at least produced a show and engineering Jua Kali artisans in Kenya.

The quantitative phase of the mixed method involved Multistage sampling, it represents a more complicated form of cluster sampling in which larger clusters are further subdivided into smaller, more targeted groupings for the purposes of surveying. To that regard Purposive sampling was applied to choose two administrative constituencies, because of the proximity and availability of data based on the premise that Juakali artisans are more in these counties. Then proportionate stratified sampling was applied to establish the number of engineering Jua Kali artisans in each of the 17 sub-counties in Nairobi County. Kenya has a population of 4.1 million Jua Kali artisan (ILO, 2001). There are about 19 varieties of Juakali artisan (King, 1975) classification. Assuming an equal distribution of artisan per Jua Kali category each would be expected to have 215,289, so it was projected that Kenya has 215,289 Jua Kali engineering artisans. Kenya has 47 counties, so Nairobi County would have 4,393 engineering Jua Kali artisans. Nairobi County is also projected to have 17 political sub counties or constituencies – Westlands, Dagoretti North, Dagoretti, Langata, Libra, Roysambu, Kasarani, Ruaraka, Embakasi South, Embakasi North, Embakasi Central, Embakasi East, Makadara, Kamkunji, Starehe and Mathare. Each sub- county or constituency would be projected to have 258 engineering Jua Kali artisan. A sample of 10% of each sub-county would be approximately 31 engineering Jua Kali artisans and these are representative of 258 engineering Jua Kali artisans per sub-county. Therefore, a total sample of 60 engineering Jua Kali artisans were tested at, this was a representative sample of 516 engineering Jua Kali artisans from two sub counties. They were again randomly selected against five engineering categories used to select the Jua Kali artisans in the different categories. These engineering categories were sound, mechanical, electrical, automotive, and machine engineering.

The sampling procedure for the qualitative phase of the mixed method was the use of snowballing to select five engineering Jua Kali artisans. While purposive sampling was used to select media producers who had at least produced a show. Snow balling sampling technique works like a chain referral. After observing the initial subject, the researcher asks for assistance from the subject to help identify people with a similar trait of interest. The chain referral process allows the researcher to reach populations that are difficult to sample when using other sampling methods. The data generation procedures involved the use of research instruments which included a questionnaire with a list of Likert scale type question and semi structured interviews were conducted through the use of interview

schedules. Questionnaires were administered to the Jua Kali artisans. Both media producers and Jua Kali artisans were taken through informant interviews that were semi structured. According to Johnson and Christensen (2008) an interview is quite popular because it is free from bias and respondents have adequate time to give well thought out answers (Johnson and Christensen, 2008).

A pilot study was conducted in this study. One sub County Embakasi South was involved in the pilot phase where Jua Kali mechanical engineers were administered with questionnaires. Deliberate efforts were made to exclude the county involved in the pre-test during the actual research. The piloting of instruments was tried out on a small group similar to the one that formed the population of the study, a view supported by Bell (2005). The pilot involved 15 Jua Kali mechanical engineering artisans. According to Gay et al. (2009), three or four participants of the intended research participants should complete the questionnaire before actual research for a survey. In the same light Yin (2009) contends that, a pilot case study should be conducted. The criterion for the pilot study was to consider the convenience, accessibility and geographical proximity. The need for piloting was to check the relevance and establish whether the instruments will adequately generate the required information, contain the proper wording of questions, proper language use, the arrangement of the items, rule out any repetitions and redundancies, ensure the data collected would be analyzable and whether the questions are acceptable, how much time would be needed in each industry and enhance the validity and reliability of the items

It is believed that using different types of procedures for collecting data and obtaining that information through different sources (media producers and Jua Kali artisans, etc.) Can augment the validity and reliability of the data and their interpretation (Zohrabi 2013). In order to ensure high response rate, the questionnaires were administered by either the researcher or a trained research assistant this ensured high reliability and return rates. The schedule interviews on the other hand involved asking semi structured questions, where the researcher was the interviewer. A research assistant was involved in note taking and recording using an electronic recording device to ensure that the interviewer maintained concentration in engaging the interviewees. Data saturation was reached when there was enough information to replicate the study, when the ability to obtain additional new information had been attained, and when further probing was no longer feasible. The use of the two methods of data collection encouraged data saturation which could be attained in a number of methods (Denzin, 2009, 2012).

The data analysis for this study was a mixed analysis since it was guided by a mixed approach. Mixed data analysis means both quantitative and qualitative analytical techniques are used in a single research study (Johnson and Christensen, 2008). A similar explanation is also given by Creswell (2009) that analysis occurs both within the quantitative (descriptive and inferential numeric analysis) and the qualitative (description and thematic text or image analysis) approach and often between the two approaches. The analysis was an interactive process along themes created from both the quantitative and qualitative data. The ethical issues observed in this paper are

This chapter presents the findings of the second objective: To examine the efforts and challenges in place to produce edutainment content for engineering Jua Kali niche groups in the engineering fields. In order for the researcher to understand what hampers the use of digital television platform, there was need to discuss the ease with which Jua Kali artisans found content from the digital television platform. It was also necessary to understand what the media producers experience was when producing content for specific audiences and what challenges could hamper the access and production of innovative content. Further, it was necessary to understand what efforts are already in place that could assist in overcoming the obstacles of using the digital television platform. Subsequently, a discussion is held in the literature to give an understanding of where the findings agree or disagree.

#### **4. Obstacles to Effective Utilization of the Digital Platform**

The researchers sought to establish what could hamper the effective utilization of the digital television platform among Jua Kali artisans in the engineering sector. Item 10 of the questionnaire sought information on whether Jua Kali engineers found it difficult to locate work related content that could assist in innovation and the understanding of their engineering work.

A majority 69.8% of Jua Kali artisans found it difficult to locate work related content that can assist in innovation and the understanding of their engineering work and only 7.5% were neutral. Subsequently, 22.7% disagreed on the issue that they found it difficult to locate work related content that can assist in innovation and the understanding of engineering work. The implications of these findings indicate the possibility that even though a majority of Jua Kali artisans have considered that there is interesting content, it is possible that the reason why they do not enjoy the content is because they find it difficult to access.

From the interviews with Jua Kali engineering artisans, it was realized from a participant that programs are more difficult to access because they are not accessible in certain formats such as DVD or in the digital set boxes. It was also found that if the shows were to be shown on television or local DVD access points, it would be more helpful in the contribution on how to innovate. Moreover, the shows that are mostly useful sometimes are mostly broadcasted under pay television and that is when they are regarded as useful. This was as shown by participant S01:

- S01: If these programs for new cars could be accessed on a normal DVD or normal television, it would have been something different because we could have accessed it. If the same programs were to be brought on TV live, then it would have also been a very different issue. It is true that in my work, there are cars that are difficult to fix leave alone innovate, for instance, there was a car here where the ignition keys fell into a toilet, we tried to get the keys redone but every time we tried to ignite the car, it wouldn't start. The car's computer system kept relaying the information through, that the keys were not compatible. Eventually we had to take the car to the factory; the problem with the car was that we lacked knowledge on how to solve the problem. If we had access to this kind of information via the digital television platforms like your saying, then there would be a big difference.

Additionally, the findings revealed that the content would be more accessible if it was tailored to specific standards for diversified audiences. The ideal situation will be such that television would deal with a diversified and fragmented audience interested in different engineering areas, from metal works to wiring and this is yet to happen. The issue again is that the content is expensive to access because pay television is always costly however it can be made affordable. Another finding is that access to the automobile engineering programs is really difficult. Especially if one does not understand Google search engines. This was as expressed by Jua Kali participant M04 who subsequently stated:

- MO4: TV has to show content on engineering; it would have to deal with all of us who work on different things, from wiring to metal works in different engineering fields. It would be great if we would watch some programs entirely on certain days. If it's a two-hour program that would be enough to share ideas. However, that is not the case, but I understand television companies like DSTV bring about content that is useful. The problem is we have to pay for such programs and they are very expensive on actual television.

Moreover, television and DVDs are neither considered digital nor are they considered avenues for learning instead they are viewed as entertainment tools. It was also revealed by Jua Kali engineer participant PO3 that usually TV is just viewed for news after which it is left for children who find it more entertaining. Additionally, it has also been pointed out that if programs were to be accessed at home, it would mean that they need to be incorporated into day to day life, by instilling efforts that could make them more visible. Generally, it has been understood that the advantage of internet powered phones is that they contain the content that is much needed, hence if well utilized they can enhance learning. However, this is challenging because it is difficult to start browsing and looking for solutions when customers start flowing in, thus engineers find it best to fix without consulting or referring to the internet. This notwithstanding, with some kind of training, there can be an appreciation of how to access useful content. These views were as expressed by engineering Jua Kali participant PO3 who explained that:

- PO3: Access to the programs that really matter is really difficult. Especially if one does not understand how to Google or work with search engines. You see television, DVDs and those things in the house are not considered as learning tools. We view them as entertainment tools. I usually watch the news and leave the rest of the children and the women in the house to enjoy other programs. It is now through such interviews that I am learning there is possibility of having such programs that deal with the work I do on television. If the programs were to be accessed at home, I would be happy if they were well advertised, and we would know when they are aired this could be a Sunday when one is relaxing, but it's harder to have a TV at work because in the Jua Kali set up, there is insecurity. But if we had this program on DVDs then we are able to buy maybe a video and watch at home. The only thing that serves us to our advantage is that in many cases, we have the phones, which sometimes we keep looking at when I am bored, or when I am calling or when I need to check up something. Sometimes the problem is that when we have customers, it becomes difficult to start browsing and looking for solutions when the customers want you to get over and done with the fixing. I believe in some kind of training we can all start appreciating how to access useful content.

Additionally, through sensitization, a habit of referring to the digital television platform will encourage a culture of innovating from an informed perspective. It will also mean that more people will look at the digital television platform more as a learning tool and not just as an entertainment tool. These findings are as depicted by the Jua Kali respondent M01 who were asked what they thought inhibited them from accessing the digital TV:

Another Jua Kali engineering respondent M01 also stated that:

- There was a BMW recently that had an issue with its acceleration. We took the car to various engineers with no avail. Eventually the vehicle was taken to DT Dobbie, and they too were unable to resolve the acceleration problem. So they impounded the car and gave the owner a different one to use. Meanwhile the car was written off and its parts sold as scrap. Later on, the new vehicle that the dealership had given also developed a similar problem. This time around we understood that the issue was as a result of the ignition. If we had a way of accessing such information via the internet or via digital television, then we would have salvaged the first car from being wrecked. The problem is that we have no such habit of checking up issues on the digital TV platform or the internet videos on how to fix problems or develop better solutions over time. We need quick access to this information.

### **5. Challenges Experienced in Accessing Content from Media Producers' Perspective**

The study revealed several challenges that inhibit Jua Kali artisans from accessing content. It was found that the media producers believe that the internet could be viewed as too complex for use by Jua Kali artisans which may not be the case. This was as expressed by participant

- A01: I think Jua Kali artisans think those things like the internet are too sophisticated and there is some level or some quality you can air, which will scare them, and they will not watch because that is not to their level. For instance, if you bring content that is too sophisticated in terms of relaying ideas, they will not take their time to watch. Again, if the content is too challenging to be accessed, such blue collar workers will not watch. So you find that they look at the internet with an attitude that is too sophisticated. So getting them to understand that yes, you can do this or practice this exercise of looking at the internet becomes a hindrance.

Equally, it was found that the content broadcasted from the digital set top boxes was believed to be too complex for Jua Kali consumption. However, through various changes and adaptations, it could be made friendlier for the Jua Kali engineering audience. Moreover, it was felt that through sensitization, Jua Kali artisans can have their attitudes changed so that they viewed the internet or digital television as a useful reference tool. This was because it was found that there were counterproductive attitudes and cultures

that meant that Jua Kali artisans could not use tools such as the internet to access information. Another feeling observed could be that there is the belief that the internet is for the extremely educated. Through education and training, content can be made more accessible and also through the translation of existing and new content into the vernacular, innovative content can be made useful. This was explained by producer E01 below:

Rather, they relied on trial and error or peer review participant E02 stated

- E02: The feeling is that the internet is for the educated, and it is not necessary, maybe because they have learned to rely on asking each other on new technologies and new solutions, so that might be a bit difficult for them. But if producers and media practitioners can come up with easy ways to use electronic program guides, where content is easily accessed and it can create a change in attitude. This would mean relief from surfing for video content that is extremely difficult to get to. Then ensuring that the videos are in the language and in the settings that are linked to the realities they face. Education and training would be helpful for them to learn to grow their business and become innovative.

Again it was found that, there could be a perception among Jua Kali artisans that the internet is something new as explained by the media producer E01 below. The idea floated by the producer is that it is difficult to access the internet among Jua Kal artisans and that it requires special skills to access. They have no idea that the platform is near for their use. This is as shown by the participant who states:

- E01: Allow me to say that on the field, these are people that have already learned by themselves understood the internet concept as a new ball game. The idea that it is difficult to access the internet and that it requires computer skill means many Jua Kali artisans do not feel confident in accessing the system.

It was also discovered that some producers are experienced in the production of customized shows, whereby applications to interpret shows to African languages are being used. However, for many reasons they do not consider making Jua Kali development content for innovation. For instance, the use of the vernacular is becoming more and more popular. But few media producers are willing to become that unconventional because it is perceived as expensive and it is easier to produce for known media houses as opposed to producing for personalized dissemination of content. This was as raised by producer A03

- A03: I think production comes at a cost of whether I will work in creating a script written in Luo? Or will I be shooting and editing from what has already been learned. So I think those are the pros and cons of why I should create something that is more away from the norm. In that, I will not focus on content on television, but content that can be featured in WhatsApp Facebook and if it will feature on TV, I will go to a channel that is easily accessed and learned from, but more and more I see this happening. Over the holidays I saw a friend translating golden bells to Luo and creating an app for it. As I go to church everyone has a bible app, but they still carry the golden bells. So I wondered you have an app, why don't you just use the app, so I think more and more we are seeing technology, especially media technology coming up but the challenge is making it easy to use. I propose the use of the vernacular, even in the language that makes it easy to use digital content.

Additionally, it was realized that producers are not able to directly target content to audiences without the reliance of broadcasters. This could be achieved by the use of WhatsApp, YouTube and other mobile applications. Unlike in the past now media producers believe that people have interactive media, however, these concepts are still new for the media producers. For instance, people are now able to participate in m- betting, where televised betting shows are fostering interactivity. It is evident that learning can also be structured in interesting ways that would encourage interactivity, however much is still being learned on how this concept can be made a reality. This was as depicted by media producer A04 who was probed about the possibility of creating content in probable format

Respondent A04 adds that

- It is possible to create content for the small audience. There is a guy I know called Jamo, he did a syndicated program of just the issues the local mwananchi kawaida person suffers from. His first stop was doing short videos via phone and uploading them on Facebook. Then he compressed them and put them on WhatsApp where guys would be able to share and wherever, then from then on he uploaded them on YouTube. He didn't have the cash or the expertise, but he just started small and now ventured out into the other station so now it's going to another station and now there are three or four stations that want to record them. So now you can start small for different people even a case point is when you do a production with KBC. KBC may be paying 20 or 50k. Then the next season you go to KBC then the next you go to NBC. So even when I go to advertisers, they will want to see what I have done and what is in it for them. So by just starting small through Facebook, YouTube and all these other small videos and when you make it viral, and you have a backing from local channels then you are able to win advertisers to do what you want.

It was also felt by producer A03 that the mainstream media were not responsive to market changes as a result, they may face stiff economic competition because they will not be able to sustain the needs of a diversified audience. Moreover, it was felt that the media did not offer a fair playing field for media producers and paid very little for syndicated programs. The generations of media managers are seen to be lax, only favoring the seasoned media producers or household names. Corruption is rampant in the media houses and film industries. Some shows tend to get more airplay because of the influence of popular producers. Respondent A03 stated

- A03: you may find it hard to produce a show with a major media house if you're not a household name where you can demand, people like Alison or the rest can go to NTV or wherever and demand I want this particular amount of money for production and they are given. There are people like Alison, Ben Kitero, Bob Nyanja. These are people who have made their mark, these are people who have strived to make the mark and have made it their own way. People like Bob Nyanja you respect them for who they are. People like Alison they overlook and say okay, sure here is money do your production. But then they will give you very little particular amount of money.

It was again found that Extra television relations such as sex scandals or even bribery claims are ailing the industry. Producer W01 admits that extra television relations and tribal issues are ailing the industry, to the extent that there is discrimination on who gets into production contracts and funding. Producer P03 cites the issues again of extra television relations where discrimination determines that one gets a role in the production industry on the basis of whom one knows. Such concepts have undermined creativity and determination to create innovative content for Jua Kali artisans.

- W01: Maybe also money, extra relations and the tribalism factor, money is necessary to encourage the great ideas, to visualize the whole thing you want to produce, but it all comes down to money, the production costs maybe there is no money and that's the challenge. It makes people become corrupt in undercutting unfair deals and tenders. Again, people from similar tribal affiliations seem to get more acceptances in the work settings.

Again it was also found by a participant producer that media managers are inclined to producing shows of only the old famous names who have been successful in the industry. It is likely that actors who have been in previous shows will get jobs. It is also likely that because there are extra television relations a show will be left to run even though its ratings go down.

- PO3: Media managers are also inclined to certain names that can work. You know it even goes down to that, so you find a funky actress, but because they have contact with the broadcaster they have to be the star in the show even though the ratings will go down, and the broadcaster keeps running it over and over again because of their sexual relations or extra television relations with the actor or the actress. So that creates the blocks. But for us, who get paid on creativity I think we need that space to think outside the box, to try and keep up with what is happening in Uganda, in Nigeria in Philippines and the US, you need to try and keep up because we know we spend a lot of time trying to unearth that, so we know, but there is the ceiling of broadcast that is always there that is why you are seeing many creative trying to end that.

Intellectual theft is also a serious problem. It was discussed that if the main broadcasters were open to creativity, fresh ideas that are not affiliated to certain broadcasting houses, then audiences such as the Jua Kali engineers would have content to watch. This issue of intellectual theft is seen to create an obstacle to creativity. Again the media manager's attitude of only going to shows with perceived popularity is also seen as a danger to providing content to audiences such as engineering Jua Kali artisans. This is as shown by Media Producer E01 PO3 and A03 below.

Producer E01 ascertains that the issue is of lazy television managers who do little or no research in programming. Therefore, they are tempted to take short cuts that lead them to producing only content that seems to have worked in the market before. This seems to bring in little or no growth in the industry at all. When producers, contribute and work very hard to produce content, it is likely that through botched deals, the intellectual work of an author or producer will be stolen when the programs are rejected, but the shows are recreated in other similar replicas of shows that were meant to for the producers.

- E01: So now the biggest problem is you have all these people, TV managers who are inclined to certain content because it has worked before and they are not crazy enough to accept new ideas that are coming up. We can tell you about how we have seen pilots which don't go far, because there is a cap put by broadcasters, that they say this cannot go on air and when your idea is good they know someone else who can do that, so they slide them the DVD and say si ufanye hi because huyo msee alifanya hii. (Could you produce this program because that guy wanted to do it). So that idea can run, but it does not run to its fullest because Joseph, who had the full idea had a vision that it could run for longer. But because of intellectual theft, you find this copycat of a show can only run for a year and a half because of the decision being put at the beginning. So that ceiling constantly creates a creative block for us...

Again producer PO3 is pointing to the idea that media managers are quick to disappoint and tell producers that their productions are not only good enough to steal the ideas to build cheaper productions. This is the case where media productions are directed to cheaper producers and quality is compromised. So one of the problems faced is that ideas are not likely to run to their fullest because the original people who came up with the ideas were not included in the running of the shows.

- PO3: Media managers are quick to disappoint and tell producers that their productions are not good enough. They cunningly give the unfinished productions to cheaper production companies that are likely to produce the same concepts cheaply. So the problem is that these ideas are not likely to run to their fullest because the original people who came up with the ideas were not included in the running of the show. Therefore, the programs end up being pulled off because they are seen unsatisfactory to audiences.

Further, it was also discovered that the producers are underfunded in producing the necessary productions. For instance, a show of 10million Kenya shillings was substituted with a production of a 100,000 ksh. Meaning the productions are of a much poorer quality and they did not cover the scope of expertise that any audience would be seeking. It was also found that there were cultures that were counterproductive. For instance, television managers invest very little research. They are only inclined to give consent to the airing of certain genres on the basis that it has worked before. In other words, they are not willing to try new concepts because they like what has worked before these concepts usually do not go far because there are obstacles that deter them. For instance, media respondent A04 and A03 said:

Respondent A04 also contributes by stating:

- I think lately guys have been lax, but that generation is being wiped out, they do not want change. You bring in a certain production and you want 10,000,000ksh they tell you we cannot do a ten million productions. The best we can do is 100 000ksh, they do more level play production.

Media producer AO3 also contributed to the issue of funding

- AO3: So you approach a network or a TV and tell them we have these programs that we want you to fund. So they tell you, what you have done on paper is good, but we need to see a pilot. So you and your broke friends, you sit down and take

- Your two, three shillings that you have and shoot a pilot, which is actually very expensive. And that person out there who has made it in the industry tells you that if you make a pilot it really helps, but that's the biggest lie ever! Because you can make a pilot and it just sits there. So you take your pilot to them, they may not even listen to it or like it. So they don't even like it, they will throw you out of the window, sometimes this is what even most happens is after you have gone and presented it to them the next time you hear that someone has taken it up. You see, the show on TV and you were not even aware that this was happening.

Lastly the issues of media structure were a hindrance to production. The media houses are run by old policies and media structures that have never been revised. They do not encourage change in the media. Old policies limit media transactions. They cause inadaptability towards the ever fragmenting audiences. Media shows like those targeting Jua Kali engineers are seen to be discouraged because they are tailored to niche audiences. The issues are as depicted by the media respondents who were interviewed. They try to explain why Jua Kali artisans may not be able to access content. Media producer, Respondent R02 also explained:

- R02: Personally, it is very hard to change a structure that is why when we have duplications of TV stations they still remain with the same structure, so moving forward, once you have made a structure you can't back on it. Again it's connected to the concept of the whole digital television yes, that now because we have a new system, it's like turning a huge old ship, it takes a long time before you make sure that you are at pure with the world but you will notice that there are some people whose whole focus is soccer and that one you can look into that, let me give you the aspect of a consumer, in a restaurant you come you want to watch soccer, you only watch it during that time so you find that it is applicable only on entertainment spots, lets come to a different setting like a house. You will definitely want something for a common mwananchi to start off with investments and all that. Now the trick is with major television stations like the one you have said Jua Kali shows, they focus a lot with the production costs, now production costs come with rights, and rights means that there is some certain strategy and certain income that both the production house and the sponsors are getting out of it, yet we have weak structures. The weak structures mean stations cannot adopt to niche audiences

The findings further revealed that the producers were not able to think futuristically. For instance, in talking on adaptations that make programmes more accessible and adopting genres that are more current as well as encouraging the intellectual growth of audiences. Conclusively, produce A04 states that if producers were able to think futuristically then production would be seen as a much easier process. Where ideas would be bought easily and also it would mean that gratification would be found among Jua Kali artisans. So there is need to encourage media producers to take charge in creating content without the fear that content will not be watched. This was as depicted by producer AO4 below:

Respondent A04 states:

- A major challenge is to think futuristically, I think for instance on a mobile phone platform, we have to be futuristic, where you have to watch the video on mobile phone, you have to stream, download it, watch it, that means you need bandwidth airtime and credit, to them accessibility to that, will be more less limited. The question would be, I want to put food or I want to invest in a mobile and download videos on that. But still on the flipside, we can be able to create a production, where they can identify and enjoy content that is linked to the work Jua kali artisans do, they will go on greater lengths to subscribe and they may even want to hear and see more about that...

## 6. Discussion

Various challenges have been cited by media producers, which perhaps could hamper the use of the digital platform. Media producers E01 and P03 in the findings, accused media managers of being unable to take on new ideas apart from those that have worked. The ideal is far from the reality as depicted by Debret (2009) in the literature reviewed. Debret (2009) views that the digital television landscape is changed and that it will need greater efforts in terms of resources and ensuring that new ideas are incorporated into the digital television platform.

The results also indicated that engineering Jua Kali artisans found it difficult to locate work related content and this could have hampered how much they could use the digital television platform to innovate. It was established by the researchers that, among engineering Jua Kali artisans, ignorance or misconceptions about internet use among Jua Kali artisans could hamper effective use. This coincides with literature reviewed. Wangare (2015) found that there are informal knowledge management practices among the Jua Kali. Results suggested that Jua Kali mediums for information included exhibitions, workshops and seminars that typify channels through which new ideas are disseminated to Jua Kali artisans. Knowledge sharing is characterized by drawing sketches and modeling, while Knowledge preservation is largely defined by photography. Knowledge retention and protection were however found to be uncharacteristic of the Jua Kali sector (Wangare, 2015). It is evident that low media usage in knowledge management could be a factor that affects Jua Kali artisan's ability to access relevant information for innovation. If media was used accurately, it could change how Jua Kali artisans retain and protect knowledge. The researcher therefore feels that Jua Kali artisans would be at the high end of innovation, if content on past prosperous and failed endeavors was available to them in the form they can easily understand and preferably through a medium of choice.

Again it was established by the researchers that engineering Jua Kali artisans suggested that the innovation shows were considered difficult to access because of factors such as time and the programs needed a flat fee to watch or pay per view. These findings agree with Soares and Viana (2014) view. As explained in the literature review.

For instance, Soares & Viana, (2014) discuss that the proliferation of video programs provided by television and telecom operators, although contributing to attracting new customers to these services does also raise some difficulties to the viewer on the selection, from the available assets, of the content of his/her interest. The traditional tools for television content search, the Electronic Program

Guides (EPGs), do not efficiently meet the viewer's needs. These guides provide extensive lists of television programs that require the user to spend too much time in order to find a program of potential interest. A similar situation occurs in Video on Demand systems (VoD), where the search functionalities are usually pretty limited. Overloaded with a lot of programs, many viewers systematically give up watching a program and tend to zap between different channels or always watch the same shows or channels (Soares & Viana, 2014). This could be a major reason why Jua Kali artisans have a challenge in access of content. The reason could be that there are a few videos on demand systems. This is where the search functionalities are very limited. It is therefore likely that engineering Jua Kali audiences are more likely to think that there is a lot of content to watch however they end up being tourists who move from one channel to another without having a particular show that they enjoy watching.

The issues of funding also mentioned by producers and participants A03, A04 and P03, it is not only a problem in Africa but also in the west. This finding is in agreement with Yun & Daldier (2013) in pg 87 of the literature review. They state that the trend in Africa has been about switching over, but because, the newest television equipment requires investing enormous funds, African countries are relying on foreign companies to operate the digital television market expanding in the whole continent. The reality is that, with exception of northern Africa, most countries do not have the capacity to invest in their own Digital television system. Hence, most African countries, especially sub-Saharan countries, the migration from analogue to digital will depend on foreign or private investment funds, such as the example of some Eastern Africa countries, where the Chinese company Startimes (Star Media) operate. Other entrants to this market include the French canal+ and the South African DStv (Yun & Daldier, 2013)

However, all is not lost in the sub-Saharan Africa countries because of private foreign funds dependency. It might not be easy to implement the desired system on time, and more unfortunately, there may not be proper studies conducted on the basic system design prior to the detail design that will lead to implementing the final system, as people will just rush to meet the defined switchover deadline. Here we hesitate to observe that some might not meet the deadline. Also, if the proper signal coverage is not closely studied, some areas may be cut from the world and there could be inconveniences caused, thus a simulcast period is definitely a must, as people should have the time to readjust, by changing their old conventional television into a new type that could connect to audio and video cables from a newly affordable set top box (Yun & Daldier, 2013).

The issues of tribalism and bribery have also been cited by participant producer W01 and P03 as probable causes deterring creativity and growth in production. Subsequently producer W01 and P03's findings agree with the literature reviewed on page 81 that in Africa ICT Infrastructure and use of ICT in Education goes hand in hand with the development of rail, road and air transport which in most cases is limited. This infrastructure is needed to implement and support ICT infrastructure, as well as the increased social and economic activity that is stimulated. Many tax regimes in the African continent define computers and cellular phones as luxury items, which adds to the price of these goods especially as the vast majority must be imported. Lack of skills together with the problem of brain drain and corruption also make widespread adoption of new technology difficult. All of the above issues are further complicated by a business climate that encourages investment in Africa through large multinational companies rather than in ways that might be more beneficial to the continent (Butcher, 2003).

The internet was also considered too sophisticated and too challenging for Jua Kali artisans' use. It was also found that mainstream media find it difficult to cope with the ever fragmenting audiences. It is at this point that the implications of not understanding the digital television platform can be seen. The findings are also illustrated by internet world statistics (2008) reviewed from the literature. They show that strikingly, only 5% of Africans use the Internet. These numbers do not support a picture of a global television downloading public. Additionally, mode of Internet access would be important to consider. In Africa, most Internet access occurs in public settings such as Internet cafes, with mobile and broadband infrastructure being "negligible." Geography also helps structure this context, with coastal countries' access to undersea fiber optic cables, affording greater bandwidth that might be needed to access Real-time or Windows-based videos, let alone Bit Torrent files (Internet World Statistics, 2008).

## 7. Summary

This paper presented the findings of the second objective of understanding the challenges and efforts are in place to produce edutainment content for Jua Kali niche groups in the engineering fields? In order for the researcher to understand what hampers the use of digital television platform, there was need to discuss the reasons why Jua Kali artisans found it difficult to access content from the digital television platform.

It was also necessary to understand what the experience of media producers was like in producing content for specific audiences and how similar challenges could hamper the access and production of innovative content. It was also necessary to understand what efforts are already in place that could assist in overcoming the obstacles of using the digital television platform.

Subsequently, a discussion was held to give an understanding of where the finding agrees or disagrees with it. The results indicated that Jua Kali artisans found it difficult to locate work related content and this could have hampered how much they could use the digital television platform to innovate. The shows were considered difficult to access because of factors such as time and the programs needed a flat fee to watch or pay per view. The other issue is that of ignorance or misconceptions about internet use among Jua Kali artisans that could hamper effective use. Producers also cited issues that can hinder the production of necessary as: funding, a poor policy structure that leads to a poor business environment as well as tribalism and nepotism as opposed to professionalism and quality.

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