The history of digital television media essay

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Television is a means of communication that can be used for dissemination of information, entertainment , education and marketing of products. There are several types of TV that include; cable TV, Satellite TV and regular TV The electromechanical TV was developed in the last decade of the 20th century Television was invented in the 1870s but it didn’t catch on until the electronic television was introduced in the early 20th century. . A large population adopted the television only after the second-world war. In 1945, only nine commercial TV stations broadcasted but they increased to 48 by 1949 and 515 in 1960 (Fischer, 2004).

It is not quite vivid as to who invented TV but Edwin Belin, on August 22nd, 1922 showed the world how his mechanical scanner that led to the development of television . His machine directed light flashes upon a selenium element that was connected to an electronic wave generator. The sent waves were received on the other end and reconverted to light flashes on a mirror. This marked the beginning of television development. Electronic scanning came up thereafter and involved breaking images into small light points then having it transmitted over radio waves. This marked the beginning of modern development (Fischer, 2004).

It is unclear who between Vladimir Kosma Zworykin and Philo Taylor Farnsworth invented modern TV, The former was a Russian-born American serving Westinghouse and an inventor while the latter was a farm boy from the state of Utah. Both claimed credit almost the same time. Zworkin though patented his work but Farnsworth showed a picture of his work.

Zworkin patented his work of the electronic scanning tube which called an iconosphere in the year 1923; it was a primitive form of the camera. Farnsworth however was the first to put his work to application He demonstrated his work using a scanning tube he designed in 1927, and successfully portrayed transmission of television signals. He received his patent later in 1930 for his electronic scanning tube.

A Scottish engineer and entrepreneur called Logier Baird in 1924 attained the transmission of simple shapes by use of mechanical television. Radio Corporation of America agreed to pay Farnsworth Television. Despite this though the technology of operation has not changed much. The older TVs were made from cathode ray tubes and employed the technology of electrons being propelled towards a fluorescent screen.

Signals use in TV transmission

The main form of TV transmission used in the 20th century was analogue transmission where analog signals were used in transmission. Analogue television and digital television have many differences. Analog television involves the transmission of TV signals using analogue signals; it is also referred to as over-the-air programming and involves the reception of a signal at the antenna then tapping it from there via cable which is then plugged to your TV. Only one broadcaster can send a signal through the cable at a time. In digital transmission a broadcaster can send multiple signals through the same cable. Digital transmission involves the conversion of image and sound TV signals to digital signals-discrete signals (ones and zero) which is then transmitted and received by the set-top or converter box at the recipient end and converted back to analogue signal.

Merits of digital TV

There was need to change from analog to digital TV for the following reasons: The switchover to digital transmission led to the freeing up of an essential parts of the important broadcast spectrum that could ensure space for essential and emergency services like the police and the fire department. It also marked a revenue earning opportunity from revenue of leasing out the extra spectrum obtained to companies as those providing services such as wireless broadband. There was also need to improve the quality of images delivered to the viewership hence give a flat platform to the TV companies to improve on their content. There will be more revenue for the government would also rise from the fact that there will be more room for more stations. The transition also became necessary conformation to the 21st century standards especially since European countries had taken up the technology and there was need for the States to rap from the same benefits as the other countries. (Goldstein, 2009).

Digital broadcasting is much better than analogue transmission. Digital broadcasting ensures high and definite consistent picture and sound quality, this is possible from the fact that digital signals accommodate much more compression than its counterpart , this allows carry more information hence a better bandwidth use and also clearer images. In as much as digital as well as analogue transmission undergo degradation with distance the quality of images in digital transmission remains superb in comparison to those of analog transmission. So long as you can receive the signal rest assured it’s a clear one. (Kruger, 2002)

Digital transmission of television also assures availability of a wider bandwidth unlike analogue transmission that was facing running out of frequency. The television stations therefore have a platform to offer a wider range of programming to its viewers than analogue transmission would allow. This is by means of multi-casting, that is the broadcasting of several programs on a single frequency such as super high definition and multiple standard definitions. Multi-casting gives TV capability of displaying web pages and other capabilities like interactive compact discs. News updates can be run along a show for example. This is unlike analog TV transmission which only accommodates a single channel per frequency.

Digital television also provides a greater immunity to noise and external interference like adverse weather conditions unlike analogue transmission that is adversely affected by these interferences with digital television it is possible to run on-screen program guides hence increasing convenience to the viewers since they can check the programs running on other channels without even switching to those channels.

Hurdles in digital TV transmission

Despite all the merits borne by digital transmission analogue signals provides a better cohesive signal with limited retardation with distance.. Alongside this has led to the discarding of the old TV sets this is not in accordance with today’s environmental concerns. (Kruger, 2002)

Digital TV requires a special TV tuner, this of which is not available in the hardware of older TV sets. Analog-only television sets had to be out-done or a set top box otherwise called a converter that carries a digital tuner used.

This is however an advantage since digital television equipment manufacturers can seize the opportunity and improve economies and livelihoods of people.

. Analog transmission uses analog signals while digital signals are used in digital TV transmission. Analog transmission involves the sending and reception of a continuous signal. This is whereby the amplitude of the signal, its phase and frequency vary in direct proportionality to the variables physical quantity. The there are no breaks in the transmission. The hurdle this transmission faces is degradation of the signal which affects the quality of the image. Digital transmission transmits information in the form of bit streams (discrete data of 1s and 0s). The waveform of a digital signal is a square wave signifying discrete states of HIGHs(1s) and LOWs(0s). The digital signals don’t degrade, hence high quality. (Goldstein, 2009).

The reception of digital television involves various forms that involve: The use of antennas in what is called Digital terrestrial television which is most widely used but is limits viewers to only a few channels while signal quality is not guaranteed. Other types of reception can be via digital cable or satellite and MMDS-Multichannel Multipoint Distribution Service where microwave TV transmission is used.

Effecting of the analog-digital switchover

The switchover from analogue to digital switched was done in phases since the whole system could not be switched over night hence both were run parallel for purposes of redundancy and to allow viewers time to acquire set top boxes or acquire digital enabled television.

High-power television stations completed the transition from analogue to digital broadcasting on 12th June, 2009. After being pushed back several times as the broadcasters and views could not attain FCC’s requirements for transition. Despite this a few low-power TV stations still broadcast the analog signal

Digital television came to be because of the eminent weaknesses of the analogue transmission and the coming up of positive drive from the political class. This was not the case in the post-war era and the will improved the 1980s. The Advisory Committee on Advanced Television Services met in 1987 to deliberate the way forward to a new and more feasible TV platform so as to advance television. Digital and Analog High definition TV systems were tested and the problem found to be spectrum. If the pictures didn’t fit if analog signals used digital signals would have to be used. This is because an analog signal of some specific quality would need a significantly wider bandwidth which evidently not enough space in the spectrum

General Instrument Corporation in 1992 showed a high-definition TV system that was all-digital for the system for the committee. The advisory committee together with FCC adopted a policy lying towards digital transmission an year later. IN 1997 a timeframe for implementation of Digital transmission was set. It was required that the Digital TV infrastructure would behave to be set up by May 1, 1999. The deadline for public TV stations was set then the deadline for viewers to swap later in 12th June 2009. (Lundström, 2006)

Conclusion

Digital television arose from the fact that there was need to outdo the old analog transmission for reasons explained above. There was continuously increasing exhaustion of the frequency spectrum for introduction of new channels let alone the interference that arose between the existing channels. Digital transmission was the only option with a solution to this avoiding congestion while upholding the quality and locking out interferences. There was also need to ensure the

The transition from Analog to Digital marked the revolutionization of the television industry bring more revenue for our and other governments all over the world. Digital transmission also ensuring high picture and sound quality. It also brought to TV attributes never seen before then. It has taken technology to a higher notch. With digital TV, the TV industry has become better than ever before. Putting all this on the weighing balance eventually analogue TV will come to an end. (Lundström, 2006)