TVCCCS: Television Viewer’s Channel Cost Calculation System On Per Second Usage

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Abstract: This invention is very useful for our country as well as society ‘Television viewers channel cost calculation system (TVCCCS)’ monitors users channel watching time in seconds and charged according to channel usage. TVCCCS is specifically defined to give benefit of various broadcasting channels. User will be charged as per their usage on viewing every channel every day per second basis. This has been done with the help of a programming card mounted inside the set top box of the viewers. Which calculates amount of time in seconds of every channel which user views every day and converted to the total amount at last of the month or a day timer is fixed to count amount of time in seconds. This amount is deducted from the main balance which is initial recharge of the user. This will continue till end of main balance. Also this calculated amount will be sent to the Channel Transmission Company and end user through internet or IOT kit or mobile chip placed inside the set top box. Because of which two way communications has been done. Also this whole remaining amount or charged amount summary displayed on the television screen to view in the message folder. So that user will come to know when to recharge for next time. Proposed technology provides one more facility which defines; user can be able to select channels as per user demand or use rather than company channel packages. User can select the channel through their registration id and will be informed to the Channel broadcasting Company, this user data stored in the company’s database. This information next forwarded to broadcasting satellite which will broadcast only selected channels. Proposed system also focuses on activation and de-activation of selected channel. When User views any channel that time that channel will be activated and other channels are de-activated. This is also done with the help of broadcasting Channel Company and satellite. Satellite will broadcast only selected channel at that time to that particular user according to transmission company guide. TVCCCS will be used for the common people to get rid of from unnecessary and extra amount of charges from various channel broadcasting companies.

Keywords: TVCCCS, Channel Transmission Company, television-screen, broadcasting satellite, IOT kit and mobile chip.

1. Introduction

Satellite television channels are in abundance already in the market. They’re creating different deals which might be involving good utilize to all or any their buyers. Consequently before you decide to acquire the actual solutions involving a single provider; it is advisable to help keep an eye out for top level specials being offered. There are various benefits and drawbacks which could come along with a certain plate TV SET package deal. Many gives could be involving good benefit but some may be a bit of a discontent, provided the actual bills that volume in the future. Additionally it is the benefit that television could be accessed anyplace and also everywhere in the entire world. You aren’t merely
limited to your own TV SET pieces more recently. The advantages of television could be knowledgeable inside your panel tops, mobiles and in addition should you be overseas. Dish TV the satellite television of India provides a number of services and facilities for its customers. Though it has various advantages it also has various disadvantages. Users who have installed the Dish TV had to face certain problems. The channels packages provide a limited number of packages. Not all the channels are available with each package. Another Dish TV disadvantage is that the user has to pay a certain amount for the local channels. The locals channels should be made free with each package but the channels are not free whereas people mostly demand for local channels. User need to pay for more equipment with the satellite television. If the user wishes to have reception in more than one television he/she will have to pay extra charges for extra equipment. If you want to include some local channels you are required to pay some additional fees this is the biggest drawback of dish TV.

To avoid all such drawbacks proposed system introduces ‘Television Viewers Channel Cost Calculation System (TVCCCS)’. TVCCCS defines calculation of cost as per user’s usage on every channel which he views on the television screen. This usage is obtained per second basis. TVCCCS are defined by considering a common people need and use. ‘Television Viewers Channel Cost Calculation System (TVCCCS)’, which comprises of various functionalities which are defined by considering a common people need and use. TVCCCS defines calculation of cost as per user’s usage on every channel which he views on the television screen. This usage is obtained per second basis. Means a user watches any channel for how many amount of time is calculated in seconds and according to that user will be charged for those channels which he views every day.

This technology is useful for common people who waste lot of money on the recharge of channels per channel and per day basis. This is achieved by mounting a programming card or chip inside the set top box of every user. This programming chip will have a timer which counts a user channel watching time in seconds every day. Here only watching time is counted which will not vary for any channel it just counts the time of watching in seconds. Initially user has to recharge which can be said as ‘Main Balance’. Programming chip will count the time in seconds and charge the channel per second basis. This amount is sent to Transmission Company and user through internet or IOT kit. This calculated amount is deleted from main balance and this has been done till next recharge of the channels. Amount of watching time cost is calculated using formula: no of second/ (24*30*3600). Here no of second is watching time in seconds, 24 is hour in a day, 30 is no of days in a month and 3600 is hour to second’s transformation. This calculation is done every day and final cost will be given to the user and end user. This amount is deducted from main balance.

This will continue up to next recharge. These messages will be displayed on the television screen to view in the messages folder. Even if user will not see for a month that time he will be not charged for a single rupee and his balance will be as it is. Which bypass the current facility of channel Transmission Company? Due to which user don’t waste his money on un-necessary channels which are charged per channel per day basis. This system provides the facility to select the number of channel according to user choice rather than Transmission Company channel packages. User selected channels will be saved in the Transmission company database to broadcast to user. Transmission Company will broadcast only selected channels to satellite and satellite will broadcast to user. So that user can save money on un-necessary channels. Also user will be asked by the channel Transmission Company for extra addition of channels. If user ok with it then only channels will be added in the user channel list once user selects any channel to watch the program at that time other channels will be deactivated only selected channel will be active. This is done through internet/ IOT kit/ Mobile chip only. Set top box send this message to channel Transmission Company server and Company server will send this data to the broadcasting satellite.
This is two way communications which has been done for sending messages from set top box to server. When user switches channel that time also same thing will happen.

TVCCCS provides such functionality due to which normal or common user will take benefit of multiple channel broadcasting in less amount of charge TVCCCS specifically useful for the television viewers which will not charge according to channel transmission company rules but according to their usage of every channel. Also user can watch and charged on those channels which he wants to be there in their channel wish list rather than company channel packages. This technology can be applied in any channel broadcasting companies to provide bigger benefit to end user.

1.1 Market Survey

The Figure 1 shows survey of regular television channel recharge company system and TVCCCS, TVCCCS is more demand of the user; it calculates the cost of viewing channel per second basis rather than per channel on per day basis. TVCCCS is more important of the user, 90% user demanding the TVCCCS, so here develops this type of system in any channel transmission company.

![Market Survey](image.png)

*Figure 1. Market survey*

2. RELATED WORK

2.1 Burton L. Greenberg, Hillard L. Fitzkee  *(patent no: WO 1986006239 A1)*

Burton et al [1] have defined, ‘Television program transmission verification method and apparatus’ comprises a method and apparatus for verifying the proper airing of television programs having a digital identification code recorded on a preselected scan line which is not normally visible to the television viewer. A plurality of television channels are automatically simultaneously monitored by a primary monitoring system at a site within the reception area and broadcast encoded programs are identified and timed and appraised as to their audio and video signal quality. The information generated is stored locally for later comparison with centrally stored information specifying the programs that should have been aired. Each of the channels is sequentially monitored for a preselected fixed time interval, which depends on the number of channels being monitored, under the control of a
programmable sequential controller. A secondary monitoring system is provided for use as a backup or for monitoring cable channels. A recorder responsive to a code recorded in the program signal is provided for locally recording the final portion of the program.

2.2 Eduardo J. Moura, Jan Maksymilian Gronski, Robert L. Packer, Robert A. Luxenberg, Frederick Enns (Patent no: US 6005850 A)

Eduardo et al [2] have defined ‘Hybrid access system with remote device monitoring scheme’ An asymmetric network communication system for use in a client-server environment having independent forward and return channels operating at different speeds and/or under different protocols on the same or different communication media to provide efficient utilization of shared resources. A network manager, such as a hybrid access system, effects transmission of packetized data on a forward (downstream) channel from the host server to multiple client devices coupled with a shared downstream media at 10 or more megabits per second while simultaneously providing selectable multiple lower speeds of operation on shared or dedicated return (upstream) channels from the client devices to the host server depending on bandwidth availability, bandwidth demand, service level authorization, etc. for the return channel. Forward and return channels may be located on the same or different communication medium including a CATV network, direct broadcast satellite network, television or radio RF broadcast network, wireless or mobile cellular facilities or the like. The return channel may reside on a PSTN either directly coupled with the host server or connected with the network manager for subsequent transmission to the host server. The network manager handles or controls the forward and return communication to establish interactive full-duplex real-time network sessions between the host and a selected client device. The network manager switches upstream channel assignment based on quality of signals transmitted to the host. The system effects changes in the upstream transmitted power based on sensed conditions.

2.3 Robert John Dunki-Jacobs, Michael Robert Hopple (patent no: US 6112053 A)

Robert et al [3] have defined ‘Television viewership monitoring system employing audio channel and synchronization information’ the system provides a system, apparatus, and method of recording a viewer's television viewership habits. Sensors passively monitor the audio signal and video signal emanating from the television. By matching the audio signal in the source and emanating from the television and by matching television frame synchronization signal and the television source synchronization signal an unambiguous identification of the viewed channel is made.

2.4 Lester L Jarrell (patent no: WO 2000022824 A9)

Lester [4] have defined ‘Television audience monitoring system and method employing display of cable converter box’ a display interface device and method for determining a currently tuned-to channel of a set-top converter box having an electronic display that indicates the currently tuned-to channel via seven-segment display elements in response to drive signals provided thereto by the set-top converter device. The display interface device includes an electrical connection to the electronic display and a controller. The controller receives the drive signals over the electrical connection and generates information representative of the currently tuned-to tuned channels for use by downstream components. The information representative of the tuned channel may be output as an ASCII value representative of the currently tuned-to channel. The display interface may be part of a viewership metering system when used in conjunction with a viewership collection meter to determine viewer habits.

2.5 Max Stephen Gratton (Patent no: US 20120158536 A1)
Max [5] have defined ‘Identifying content purchasing options based on user preferences’. Identifying content purchasing options based on user preferences is described. In one aspect, a system receives user content preferences. Multiple content packages associated with a content provider are identified such that the content packages include at least a portion of the user content preferences. The system identifies any user content preferences missing from each of the multiple content packages. Based on the identified content packages and the user content preferences, a listing of content purchasing options is generated that is appropriate for the user. The listing of content purchasing options also includes any user content preferences missing from each of the multiple content packages. [5].

2.6 Edward Reynolds, (patent no: US 20130179912 A1)

Edward [6] have defined 'Systems and methods for collecting television viewing data and television interactivity' A system for collecting viewing data (or viewing habits) and automatically measuring the size of an audience viewing or watching a broadcast at any particular time is provided. In the system, a remote control device may be adapted to collect and manage the collection of the viewing data on television audiences, including requests for the data from third parties. The data may be collected using a remote control device and then transmitted to a remote computer where it may be stored and accumulated, so that over time, the viewing habits of the User may be identified. The remote control device may also be used to allow a User to interact with the television to order a product, monetize advertising, participate in an auction and/or rate a television program.

2.7 Zee Neumeier, Michael Collette, W. Leo Hearty (patent no: US 20170026671 A1)

Zee et al [7] have defined 'Monitoring individual viewing of television events using tracking pixels and cookies' A real-time content identification and tracking system enabling monitoring of television programming consumption specific to an individual television or other viewing device. Metrics collected may include data regarding viewing of specific broadcast media, commercial messages, interactive on-screen information or other programming, as well as locally cached, time-shifted programming. Information about media consumption by such specific television sets or other viewing means may be returned to a commercial client of the system through a trusted third-party intermediary service and, in certain embodiments, encoded tokens may be used to manage the display of certain events as well as to enable robust auditing of each involved party's contractual performance.

3. TELEVISION VIEWERS CHANNEL COST CALCULATION SYSTEM (TVCCCS)

'Television viewers channel cost calculation system (TVCCCS)' which provides various functionalities due to which normal or middle or less income people will afford to opt dish Television channels. Here TVCCCS works to calculate cost of the various channels which are transmitted according to user wish as per usage. It involves calculating cost of each channel per second usage of every viewer. Initially user has to recharge for particular amount e.g. 200, after that cost of any channel is calculated according to viewers use per second. Suppose one channel is watched by user for 2 hour a day or it can vary every day, also channels are vary it is applicable to every channel which user view on the television screen. This 2 hour is divided by 24*30*3600, so that the final answer will be in the seconds. And finally user will be charged per second usage. These this is applied for every day and deleted from main balance. This is done by using a programming chip which is mounted in the set top box. Which will inform about this cost to user as well as Transmission Company? This message is displayed on the television screen also in the messages folder. In between if balance is less to watch channels that time user will be informed to credit balance on their respective set top box through their id’s. User can be able to select channels as per their demands even if company wants to add unnecessary channels first of all company have to ask the user.
This TVCCCS provides one more function that is when user views single channel that time other channels are de-activated and once switch the channel that time also same case will be applicable. This whole system will be useful for every common people to view multiple channels as per their demand and their usage. User will not be charged if he has not seen any channel for longer or shorter time, because he will be charged per second usage rather than per day basis. Two way communications has been done in the proposed system with the help of IOT kit or mobile chip, to send messages from set top box to the global server of transmission or broadcasting company.

4. IMPLEMENTATION DETAILS

4.1 ‘Television viewers channel cost calculation system (TVCCCS)’

Figure 2 shows complete block diagram of ‘Television viewers channel cost calculation system (TVCCCS)’. It comprises of Transmission company server, database, satellite, receiver, IOT kit/mobile chip, television screen, set top box, programming card, and viewer. Figure 2 shows overall architecture of ‘Television viewers channel cost calculation system (TVCCCS)’. TVCCCS calculates the cost of channel according to user’s usage per second basis Transmission company server having detailed information of user which is registered to their channel transmission company. This server stores user information along with their channel wish list as well as amount to be charge in the database. Normally transmission company server having channel packages which are broadcasted over the television screen through satellite and receiver.

Transmission company server sends channel information of every user to the satellite and satellite broadcasts the channel signal data to receiver of dish television service. On next receiver sends signal to set top box and set top box forwards this data on the television screen to view various programs on various channels. Viewer watches various programs on the television screen. To view various channels, various channel packages are announced by the company. User has to take these packages without any option. Also even if user have not seen some channels still he has to pay for that because those channels are included in company packages. Also some time user will be out of station that time also his recharge will be wasted because those are charged per day basis also. This is the normal procedure to be followed in the current situation and which is one direction communication.

So the TVCCCS overcomes this situation to make user happy. Initially user will select channels according to their choice rather than company choice. This will be saved in the transmission company database along with their registered ids. Due to channel selection, selected channels will be broadcasted towards satellite and through satellite to receiver. In this situation two way
communications is done from company to set top box and from set top box to company with the help of IOT kit or mobile chip. Once user selects any channel only that selected channel will be active other channels are de-active. This information is sent from set top box towards Transmission Company and from Transmission Company towards satellite. Once user selects any channel that channel watching time is counted in per second manner, and channel will be charged per second manner.

This calculation is done in the programming card of set top box. Every day for how much time user views channel will be counted in seconds and according to that charges will be applied. This calculation done by using formula: no of seconds (watching time)/ 24*30*3600. 24 is the hour per day, 30 is no of days in a month and 3600 is the hour to second transformation. Initially user has to recharge for some amount which will be main balance. After calculation of channel cost calculated amount is deducted from main balance and this is applied for every channel which user will watch on the television screen. This calculated amount will be sent to channel Transmission Company as well as user from set top box with the help of IOT kit or mobile chip. This message also displayed on the television screen to view. This is the overall architecture of ‘Television viewers channel cost calculation system (TVCCCS)’

4.2 Complete block diagram of single channel activation with user choice.

Figure 3 shows complete block diagram of ‘Single Channel activation with user’s choice’. It comprises of Channel Transmission company server, database, satellite, set top box, and viewer.

![Figure 3. Complete block diagram of single channel activation with user choice.](image)

In the current situation of transmission of channels only one way communication has been possible from company server to satellite and from satellite to the receiver. This new technology is developed to minimize the cost on various unnecessary channels which user even have not seen for single time but still he has to pay for those channels. E.g. Marathi region people will not understand Tamil language channels but still user have to pay for those channels also.

Due to such situation user have to pay for unnecessary channels. This single channel activation will overcome such a situation. Here only selected channel will be broadcasted on the television screen that time other channel will be deactivate. Once user selects any channel that information is given to transmission company server with the help of IOT kit or mobile chip. Then transmission company server will forward this information to the broadcasting satellite. Satellite will broadcasts only selected channel towards receiver of the user. And next user will view selected program that time other channels are deactivated. And according to this situation user will be charged per second viewing time.
4.3 Complete Work Flow Diagram TVCCCS Mechanism

Figure 4 shows complete work flow diagram of ‘Television viewers channel cost calculation system (TVCCCS)’. It comprises of user select channel, set top box accept request, request sent to transmission company server through IOT kit/mobile chip, satellite, single channel transmission, de-activation of channel, programming card, calculation of cost and send calculation summary. User selects any channel from his selected channel list to view television program. Once user selects any channel that request is accepted by the set top box. Set top box having IOT kit or Mobile chip to send messages to transmission company server. These messages are sent to transmission company server.
These messages are sent to inform the satellite that selected channel only active during user viewing and other channels should be de-active. According to Transmission Company satellite direction broadcasts the channel. And these activation deactivations of channels are takes place as user selects channel or switches channel. All this information is sent to transmission company server through set top box. Only selected channel will be active and other channels will be de-active during viewing any channel. Programming card is mounted in the set top box which calculates viewing cost per second basis and informs this information to the user and transmission company. Also user can be able to view message on the television screen.

4.4 **Work flow diagram of calculation of cost of TV channel per second usage mechanism.**

Figure 5 shows work flow diagram of calculation of cost of TV channel per second usage mechanism. It comprises of Initial recharge, channel selection, cost calculation set top box, timer in the set top box, cost calculation formula, cost deduction from main balance, send information , and next recharge message. Proposed system uses per second charge for the viewing any channel by following mobile company working. Initially user will talk for some second but he has to pay for whole minute. Afterword’s per second charges on per second talk technology is come in existence. By taking this example same technology will be applied on the television channel companies. Because of which user has to pay for what he will view on the television screen, rather than list of channels per day basis. In this process user have to initially recharge with some amount which is says as main balance. User is able to select channels as per his wish from multiple channels on the defined website.

This channel list is saved in the transmission company server. TVCCCS calculates cost of viewing by accessing channel per second basis. Set top box having programming card inside which calculates this cost of viewing. Timer is set in the set top box which counts the viewing time in seconds. This viewing time of every channel which user views in a month is calculated. And cost is calculated by the formula: no of second/ (24*30*3600). By this formula we will cost of every channel which views in a month. Total of all this channels cost is done and deleted from the main balance. This has been done till end of main balance after that user will be informed to perform next recharge. This calculation summery is sent to company as well as user on his registered ids. Also messages are displayed on the television screen to view. All this information is sent to and from set top box to the transmission company.
Figure 5. Work flow diagram of calculation of cost of TV channel per second usage mechanism

4.5 Complete work flow diagram of un-necessary channel addition mechanism
Figure 6 shows complete work flow diagram of unnecessary channel addition mechanism. It comprises of Transmission company server, unnecessary channel addition, ask user, add the channel and don’t add the channel. Many times this happens that multiple channels are added unnecessarily without asking registered user in their channel list. Initially channel Transmission Company says those channels are free of cost but later on user recharge amount will be incremented. Also there are multiple channels are there in the channel list which user have not seen for single time also. Due to addition of extra channels channel numbers are changed so many user will get problem due to this channel number change.

Such a situation can be overcome by applying this new technology. Here without user permission not a single channel will be added in the user channel list. Transmission Company server when offering any channels first of all they have to inform to the user. User will be asked for unnecessary channel addition or free channel addition by the company server. If user is ready to do new change then user will send acceptance to add the channels in users channel list. This change will be done in the database of Transmission Company. Next on user can view additional channels along with their selected channels. If user doesn’t want to add these new channels then user will send negative response to the Transmission Company. In this situation extra channels will not be added in the user channels list.
This technology is developed to avoid unnecessary addition of channels and enjoy the television program without any headache.

4.6 Complete work flow diagram of selected channel addition mechanism.

![Diagram showing complete work flow diagram of selected channel addition mechanism.](image)

**Figure 7.** Complete work flow diagram of selected channel addition mechanism.

Figure 7 shows complete work flow diagram of selected channel addition mechanism. It comprises of channel selection, send request to Transmission Company, activate selected channel, and store user selected channel in database.

In the current situation of various channel broadcasting company announces their channel packages with particular amount, these packages includes multiple languages/region programs channels, lot of music channels, movie channels, news channels of every region, kids programs, entertainment and many more. Consider a situation where a family with one region can see multiple region channels or multiple region news channels or is really they need this lot of channels in a monthly package. But common people don’t have any option because company has announced that package along with these channels. User doesn’t have any option without accepting their condition.

Transmission Company having recharge amount by considering all channels where user will see or not on the television screen. So common people will have to pay extra charges on all these stuff. So the solution on this problem is can we select channels on our wish rather than company wish. Here user can be able to select the channels as per their demand and choice. User is registered in the channel
transmission company with their respective ids. So on company website channel list is there so that user is able to select channel as per his demand.

User selects channels according to their choice and sends this request to channel transmission company server. Once company server accepts this request selected channels will be broadcasted towards particular user on their television screen. This channel list along with user information is stored in the company database. Due to this technology user is able to select and view channels according to their choice, which will saves user’s money.

4.7 Complete work flow diagram of single channel activation on user demand.

Figure 8 shows a complete work flow diagram of single channel activation on user demand. It comprises of channel selection, set top box request, transmission company server and IOT kit/ mobile chip, satellite, signal transmission, de-active other channel, switch channel and cost calculation. As explained in Figure 3, user is able to watch selected channel by activating only that selected channel during viewing the program on the selected channel. Figure 8 shows how work flow goes on step by step during this single channel activation on user demand. Initially user selects channel list of their choice from company website which is stored in the company database. These all user information along with selected channels is stored in the company database. So that Transmission or broadcasting company will broadcasts only selected channel rather than unused channels. User selects any channel and watches favorite program. Once he selects any channel from his defined channel list set top box sends this request to the transmission company server. This is the two way communication messages are sent from Transmission Company to the set top box and from set top box to the transmission company. This communication is possible with the help of IOT kit or mobile chip due to which set top box is able to send messages to the transmission company server. This request is send to active only selected channel or broadcast only selected channel through satellite. Other channels will be deactivated. This has been done for all the channels when user switches from one channel to other channel. That time also same process has been followed after that calculation of cost of viewing every channel is done on per second calculation basis.
Figure 8. Complete work flow diagram of single channel activation on user demand.

In this way TVCCCS is useful for common people who are suppressed due to these high cost channel transmission companies. These companies apply unnecessary channels and charges on them which are not affordable to less income people. Thus proposed technology calculates viewing cost per second basis rather than per channel basis. Due to this technology lot of money will be saved and will be applied to every channel transmission companies.
5. NOVEL FEATURE & ANALYSIS OF TELEVISION VIEWERS CHANNEL COST CALCULATION SYSTEM (TVCCCS)

‘Television viewers channel cost calculation system (TVCCCS)’ monitors users channel watching time in seconds and charged according to channel usage. TVCCCS is specifically defined to give benefit of various broadcasting channels. User will be charged as per their usage on viewing every channel every day per second basis. This has been done with the help of a programming card mounted inside the set top box of the viewers. This calculates amount of time in seconds of every channel which user views every day and converted to the total amount at last of the month or a day.

Table 1 shows technical analysis of regular television channel recharge system and TVCCCS. Table describes the additional features which are present in the TVCCCS which are not available in regular television channel recharge system. This table describes how TVCCCS is better than regular television channel recharge system.

Table 2 shows recharge amount difference between regular TV channel recharge system and TVCCCS. In table 1.2 TVCCCS calculates cost of channel viewing per second basis which is very less and affordable to very common user.

Here cost calculated by using following formula:

\[
\text{Amount} = \frac{\text{no of second}}{24*30*3600}
\]

In Table 2, 100 channels views for 3 hour daily so total cost of 100 channel for 1 month is calculated as:

\[
\text{Amount} = \frac{3*3600*100}{24*30*3600}
\]

In this way amount for 1 month for multiple channel for various watching time is calculated, which is very less.

Table 1. Difference in Regular seat reservation booking and WVSOMS Table

| Parameters                                | System                              |
|-------------------------------------------|-------------------------------------|
| Per second channel usage                  | No                                  |
| User Channel selection                    | No                                  |
| Two way communication to send messages    | No                                  |
| Permission of user before adding any channel | No                                  |
| Affordable to user                        | No                                  |
| Human effort and customer comfort         | Yes                                 |

| Parameters                                | TVCCCS                              |
|-------------------------------------------|-------------------------------------|
| Per second channel usage                  | Yes                                 |
| User Channel selection                    | Yes                                 |
| Two way communication to send messages    | Yes                                 |
| Permission of user before adding any channel | Yes                                 |
| Affordable to user                        | Yes                                 |
| Human effort and customer comfort         | No                                  |
Table 2. Profit in rupees of regular seat booking and WVSOMS Table

| No of channels | Regular Month recharge (Cost Rupees) | TVCCCS (Cost in rupees) (Watch each channel for 3 hour daily) |
|----------------|-------------------------------------|---------------------------------------------------------------|
| 100 channels   | 50                                  | 0.208                                                         |
| 200 channels   | 80                                  | 0.833                                                         |
| 300 channels   | 150                                 | 1.25                                                          |
| 400 channels   | 200                                 | 1.66                                                          |
| 500 channels   | 250                                 | 2.08                                                          |

Figure 9. Difference in recharge amount of regular TV Recharge and TVCCCS

Figure 9 shows difference in multiple channel recharge amount of regular TV channel recharge system and TVCCCS, which charges very less amount for multiple channels also and affordable to normal user.

6. Key Benefits

1. Current and future trends adopted by the key market players are highlighted to determine the overall competitiveness of the market of a TVCCCS (Television Viewers Channel Cost Calculation System).
2. The technology-effective drivers and opportunities are highlighted to describe the top factors responsible for market growth in TVCCCS (Television Viewers Channel Cost Calculation System).
A quantitative analysis of the market through 2016-2025 is provided to highlight the market potential.

7. Advantage(s) of Wireless Vehicle Seat Occupation Monitoring System (WVSOMS):

1. ‘Television viewers channel cost calculation system (TVCCCS)’ uses the technology which calculates the channel amount as per usage.
2. ‘Television viewers channel cost calculation system (TVCCCS)’ user will be charged according to per second use of every channel which user will view.
3. ‘Television viewers channel cost calculation system (TVCCCS)’ final amount balance will be sent to user and Transmission Company.
4. ‘Television viewers channel cost calculation system (TVCCCS)’ is not so expensive.
5. ‘Television viewers channel cost calculation system (TVCCCS)’ saves human efforts.
6. ‘Wireless Vehicle Seat Occupation Monitoring System (WTPMS)’ useful to common people who waste lot of money on recharge of various dish television channels.
7. ‘Television viewers channel cost calculation system (TVCCCS)’, user is able to select channels according to their choice rather than company channel pack.
8. ‘Television viewers channel cost calculation system (TVCCCS)’, un-necessary channels are not added without user permission.
9. ‘Television viewers channel cost calculation system (TVCCCS)’, saves user money.
10. ‘Television viewers channel cost calculation system (TVCCCS)’, when user watches any channel that channel only activated other are de-activated.
11. Activation and de-activation of channels done through satellite.
12. If user haven’t seen any channel for 1 month user will be not charged for single rupee. Because user will be charged per usage not per day basis.
13. ‘Television viewers channel cost calculation system (TVCCCS)’ is easy to use/mount.
14. ‘Television viewers channel cost calculation system (TVCCCS)’, can be used in any dish television set top box.
15. Two way communications is done to send messages from and receive message on the set top box.

Conclusion

‘Television viewers channel cost calculation system (TVCCCS)’, invents multiple functionalities which are useful for the common people. This system will be used for the common people to get rid of from unnecessary and extra amount of charges from various channel broadcasting companies. Here user have to pay for the channels which he have selected and used every day according to per second usage as like mobile company, where call be charged per second basis. Same way user will be charged per second usage of every channel which he watch on the television screen. TVCCS provides various facilities which include channel cost calculation per second usage, addition of unnecessary channels by asking user and selection of channels as per user choice. Programming card is mounted inside the set top box which calculates and counts amount of time and charged according to per second usage. This cost amount will be informed to the user and broadcasting channel server through IOT kit or mobile chip which is done by two way communication. Messages are sent to and from the set top box. Also amount of channel viewing displayed on the television screen in the message folder by opening the message user can watch the message. This functionality used in various broadcasting company. Also useful for common people who waste lot of money on unnecessary demand of broadcasting companies.
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