

**From the magazine "Hotel and restaurant", # 4 (June 2002)**

**The topic of the issue: TV at a hotel**

**The article: "It's just a different life"**

### **A bit of background**

75 years ago Vladimir Zvorikin, a Russian scientist, first displayed his device for transferring an image over a distance. Since 1930s, first subscriber TV sets appeared in the West.

In our country mass television developed during the post-war years. The elder generation still remembers exotic wooden boxes with tiny screens. A glass lens filled with water was put in front of the screen, which gave an opportunity for a family, friends, relatives and neighbors, sitting close to each other, to watch black-and-white information programmes, rare movies and, later, developing KVN - the namesake of the first mass Soviet TV set. It was not such a long time ago but it is already a part of history.

Today television has become a major part of our everyday life.

Today television is mass-media, a means of entertainment; an instrument of advertising and a weapon of political technologies; a means of telecommunication and a means of educating; a means of security and observation; means of remote control and a component of military technics; it is a game, a tool and means of relaxation; a TV shop and a storage of books; a source of income and an item of expenses. It is difficult to imagine life of a contemporary man without TV.

People are used to TV sets and television. They wish to watch their favorite programme at a certain time, need to know up-to the minute news, currency exchange rates, quotation of stocks or simply a weather forecast. Sport fans and quiz addicts are quite another issue...

And then a man goes to a hotel for several days...

Can a hotel be without a TV? Well, it can... but it would be just a different life.

### **Fundamentals**

Since TV is indispensable at a hotel, you will have to have it. How to do it?

### **TV net of a hotel**

A usual TV net of a hotel consists of three main components:

1. Central channel-forming station
2. Subscriber TV distributing net
3. Subscriber TV set

### **Central channel-forming station**

In cases when a hotel can obtain a ready package of TV programmes from a local cable TV net, a special correcting amplifier prepares programmes for translation. But if you have to do everything by yourself, you cannot manage without a central channel-forming station.

It provides reception of TV channels from the air, from space (satellite TV channels) or multi-channel cable and local terrestrial reception as well as creating the hotel's own TV channels.

For reception of local TV channels, TV antennae of the corresponding range are used as well as antennae amplifiers (in case of low level of signals). Converters transform the frequency of the received signals into the frequency of the channels transmitted into the rooms of the hotel. This transformation is necessary to avoid distortion of TV signals. In order to make the cost of a TV system cheaper, small hotels might use cheaper central stations of direct amplifying (without transformation of frequency).

Satellite TV channels are received through a special antenna. As a rule, it is an assembly consisting of two main components: a parabolic reflector and a low-noise converter. The latter transforms the super-high-frequency spectrum of TV channels received from a satellite to the level that allows receiving devices to work. The spectrum of TV channels received by a satellite antenna is transferred to the entrance of special satellite receivers (sometimes they are also called tuners). Each receiver accepts one (sometimes two) satellite channels. There are also multi-channeled receiver devices for 4-5-6-8-16 channels, which are relatively inexpensive but have lower performance.

A significant number of satellite channels are transmitted in coded form. For receiving coded satellite programmes you have to have a special decoder, which in some cases might be incorporated into a receiver. For fighting "pirates" the codes of the channels are periodically changed using coded cards. Every decoder has a card slot for a card. You have to take into account that those card slots are not compatible with any other type of a card. The card must correspond with "its" type of a card slot. Also, one must take into account that usage of widely distributed and cheaper "pirate" coded cards and decoders is fraught with serious consequences: not only potential problems with law but also technical problems.

Since digital TV came in to play, the number and quality of satellite TV channels greatly increased. It became possible because now instead of one analogue channel you can transmit eight or more digital ones. Digital TV simplifies the technology of coding. Packages of channels under the joint code appeared: NTV+, Sky digital, Noos, VIASAT and others. The user (subscriber) of a package buys one code card and obtains an access

to any channel in the package. Quite often the packages have various service additions and are compatible with local interactive TV systems.

An antenna for reception of the local multi-channel TV system programmes is similar either to a usual antenna of decimeter range or a satellite antenna. Its size, as a rule, is comparatively small and it doesn't cause problems with placement.

Technology of reception of local multi-channel TV nets corresponds with technology of reception of satellite programmes: receivers and decoders are also analogous to satellite ones. Coded cards are used more seldom as well as coding itself.

In professional TV systems satellite programmes and programmes of local nets might come separately (video and audio) from the exit of receivers and decoders in the structure of a video-channel. For translation of such programmes in the TV net of a hotel you need to use modulators: a separate modulator for every channel (sometimes one modulator for 2-4 channels). This technology of translation has its advantages and disadvantages but it is a subject for a separate discussion.

Received local, satellite and local multi-channel TV programmes are gathered in the central channel-forming station. A hotel can add to those programmes the channels it has created itself using video-players, CD and DVD players and computers.

A package of TV programmes, formed this way, is amplified through a main amplifier and transferred into the distributing TV subscriber net of a hotel.

### **How much will it cost?**

Approximate cost of a central station is:

1. A usual TV antenna costs from several US\$ to several tens of US\$.
2. An antenna amplifier costs about 10-30 US\$.
3. The cost of satellite TV antenna with a low-noise converter is from several tens of US\$ to several hundreds US\$.
4. A one-channel converter for transforming local or regional channels costs 100-300 US\$.
5. A professional analogue satellite receiver costs a few hundreds US\$ (a digital satellite receiver is 4-5 times more expensive).
6. A decoder costs a few hundreds US\$.
7. A code card for a decoder costs from a few tens to a few hundreds US\$.

In average the equipment for reception of one local TV channel is from a few tens to a few hundreds US\$ (if frequency of received channel is transformed).

The cost of equipment for reception of one satellite TV channel is about several hundreds US\$. Digital satellite receivers are 3-4 times more

expensive than analogue ones. Sometimes hotels in order to save money buy cheaper domestic analogue receivers instead of professional satellite ones. What does that bring? Domestic analogue receivers and decoders are not supposed to be used for around-the-clock work; they cannot sustain voltage overloads and other changes. This way an attempt of saving brings problems with translation.

Summarizing the above-mentioned information, it can be said that the total cost of a central channel-forming station depends on the number and types of received TV channels as well as the quality of purchased equipment.

Subscriber TV distribution net (STV Net) of a hotel transfers TV signals from the central channel-forming station into a TV set in a hotel room and includes: TV signal amplifiers, coaxial cable, distribution device and subscriber TV plugs.

The cost of STV Net depends on the number and location of hotel rooms and the configuration of a building. Approximately, STV Net for one room will cost a few tens of US\$.

Subscriber hotel TV set is a bit different from a usual TV set. The main differences are: a greeting for a guest (when the TV set is turned on, a pre-composed text-greeting appears on the screen); an installed clock; an alarm-clock; a sleep-time that turns off a TV set if a guest doesn't "use" it for a long time; an additional socket for a sound channel to plug-in an additional loudspeaker (for example, in the bathroom). Also, in the TV set there must be a special loading device that allows it to be tuned for 20-40 channels within several seconds and record the greeting; a device that blocks unsanctioned attempts to re-tune the TV set by a guest (it is a painful issue for hotel TV systems); a device that limits maximum volume.

Various models of hotel TV sets also have other advantages over common models; for example: radio-channels; a device reflecting tuned channels; an indicator of a remote control charge displaying voltage decrease, etc. A hotel TV set is more expensive than a usual one by about 30-40 %.

### **What to do next?**

#### Items of expenses

So, the hotel, having spent a certain amount of money, created a TV system. For keeping it working you also need money. The main item of expenses for the hotel is a subscriber payment for using TV programmes. Only state and some commercial TV programmes can be used for free.

The question is for how long such channels stay free. In many countries this subscriber payment already exists and is a significant item of expenses for hotels. For example, an English hotel for 23 rooms, having the right to use 5 air programmes, pays about 1000 GBP (approximately 2000 US\$) per year.

Most TV channels transmitted by local nets and satellite TV programmes are given to users for a certain cost. One should also take into account that tariffs for TV usage in hotels will most likely be different than for private individuals.

For hotels the cost of usage of TV programmes depends on the number of "stars" and varies from several cents to 1 US\$ or more per month per channel for a room. Apparently the level of occupancy of a hotel is not taken into account.

The other item of expenditure is the maintenance of the TV system. It is much less than the expense of "programming" (subscriber payment). A significant part of this expense goes on keeping TV sets in order. In this case the hotel pays a maintenance firm a small fixed monthly payment. The maintenance firm repairs broken TV sets within a contract period, regardless of the defect.

### **The use of the hotel's own channels**

One more direction for investing money is the creation of the hotel's own information channels. In this, a hotel can inform guests about offered services, tariffs, restaurant menu, arranged events and share various reference information. Modern technologies allow performing a quick change of transmitted information on information channels; putting replacement text; changing sound and adding various special effects.

Hotels use such channels for commercial purposes, placing (for payment) advertisement of nearby restaurants, casino, trade complexes, entertainment places, etc.

Information channels at the hotel-resorts and sanatoriums are used in medical and health purposes. They transmit relaxation programmes; doctor's recommendations for a day; methods of self-help medical and preventive procedures, etc.

The cost of technical equipment for creation of an information channel is comparable with the cost of satellite channel. Apart from technical equipment, the information channel needs information itself recorded on a technical carrier for subsequent translation in the TV system of the hotel. The cost of creation of this information should be discussed separately.

When creating a hotel TV net, there is always a question: how many and what channels does the hotel need? This issue should be solved

individually, taking into account specifics, prestige and financial opportunities of the hotel.

The conclusion for the above-mentioned is often sad as hotel TV is a significant item of expenses. But not everything is that bad.

### **Commercial TV systems for hotels**

TV might cause not only expenses. Putting the expenses for "programming" on a guest, offering a guest additional TV services, TV can become a good source of additional income.

The task of turning TV into an additional source of income for a hotel is solved by commercial TV systems.

There are quite many such systems; they differ not only in the principles of their operating and used technologies but also in the methods of presenting additional services to a guest and the methods of receiving payment for the services.

But despite these differences, all systems of commercial TV have common objectives and problems:

1. Offering a guest a bigger amount of various additional services of high quality.
2. Monitoring the reception of requested additional services by the guest.
3. Calculating the cost for using additional services.
4. Minimizing problems of hotel staff during the calculation of the cost for using additional services.

To solve these problems, all systems of commercial TV have the same components:

1. Central equipment that creates pay TV channels or presents movies by the order of a guest and creates other pay services; monitors the process of presenting pay services to the guest or usage of these pay services (those two processes differ significantly); calculates the payment for the pay services. Central equipment has an interface for connection to the hotel computer net to exchange data on check-in and check-out of guests and calculating payment for the services.

The central equipment of a commercial system might combine with a central channel-forming station of a usual system but might be located separately, depending on the type and technological specifications of the commercial systems.

Central equipment, as a rule, has a modem connection for remote control and management through telephone channels.

2. Distributing subscriber net provides "delivery" of commercial TV system production to the guest's TV set but has also additional functions of transferring control signals and managing commercial TV system. That

is why it is created on a basis of a usual distributing net but has additional equipment creating a channel of feedback.

3. Address subscriber's device receives request signals from central equipment of the system; it confirms the state of the guest's TV set at the present moment as well as the wish of the guest to watch a pay channel; it can block a pay channel upon a signal from the central equipment of the system. This device can perform other functions as well, depending on the scheme of the work of a commercial TV system.

The most important function of the address subscriber's device is the confirmation of the guest's wish to watch a pay channel or to use other pay services. In different systems this function can be carried out in different ways but it cannot allow a double interpretation of the guest's actions.

The systems of commercial TV, depending on the construction and operative principle, can provide a guest with a wide range of services. The decision about which services should be free of charge and which should be paid for belongs to the hotel.

## **Types of commercial TV systems and their distinctive features**

### **Interactive TV systems**

Created on the basis of usual analogue systems, interactive TV systems are widely distributed. In these systems a special (system) TV set is extended with an active address subscriber's module that receives information and commands via a coaxial cable of the subscriber's TV net from the central equipment of the system (it is often called a Controller) and transfers requested or pre-arranged information back.

Central equipment of interactive TV systems, as a rule, can be located independently from the equipment of central stations. It is especially convenient in cases when a hotel receives TV programmes from the city cable net and doesn't have its own central station.

Interactive TV systems provide the guests of the hotel with a wide range of entertainment and services: pay TV channels; movies by the guest's order; electronic games; TV shop; personal messages and information; alarm-clock; checking the guest's hotel bill; express check-out, etc.

As a rule, there is a block of services for the hotel staff: information about the state of rooms, mini-bars and various technical equipment.

Interactive TV systems include informational channels for the needs of the system itself (instructions and advice for guests) and for the needs of the hotel.

### **Pay TV system**

It is the simplest and most available system of commercial TV for hotels. However, it has a more limited spectrum of services - usually pay TV channels and, in some cases, information channels for the system's own needs and information channels for the hotel.

The most advanced systems of pay TV might provide some other services: greetings, messages, alarm-clock, information as well as monitoring the state of TV sets.

The main advantage of those systems is that there is no need for a special (system) TV set, that is, a hotel can purchase a system of pay TV without replacing its TV sets, which significantly lowers the cost of the system. Besides, the components included in the system of pay TV and its software are much cheaper than the same kind of equipment for interactive TV.

Some pay TV systems have remote access devices that allow monitoring and control through telephone channels via a usual modem.

## **Commercial TV system economics**

### **Expenses for creating commercial TV systems**

#### **Cost of equipment and software**

The cost of central equipment and software of most pay TV systems is several thousands US\$ and practically doesn't depend on the number of rooms of a hotel.

The cost of central equipment and software of interactive TV systems is about 10 000 US\$ and in some cases depends on the number of rooms and the number of ordered service functions.

For effective use of all facets of the system as well as for simplification of the work for the hotel staff, the systems of commercial TV must have a connection with computer systems (PMS) of the hotels. All hotel PMS make provision for such a connection.

A guest's TV set for all interactive digital telecommunication systems costs about several hundreds US\$. The price depends on the size of the screen and the demands of the manufacturer.

An address subscriber's device of pay TV systems costs from several tens to 100 US\$.

An active address subscriber's module of interactive TV systems costs a few hundreds US\$.

#### **Cost of system maintenance**

Quite often the firms providing commercial TV systems demand by-time payment "for software maintenance" of the systems. The size of this payment depends on the number of rooms at the hotel and the range of



services provided. In most cases the payment is several US\$ for a room per year for every service.

A more significant item of expenses is the payment for the video-materials transmitted on pay channels. In many cases it is a regularly (usually once a month) provided set of video-tapes for pay channels or "movie by order" channels. The set includes 3-4 tapes for one pay channel. The cost of every tape is about 10 US\$. During the first delivery, as a rule, the cost of the tape itself is also taken.

Together with the tapes most providers of video-material also provide the booklets containing descriptions of the movies and tariffs for watching them.

### **Income from commercial TV systems**

Pay TV channels attract more interest from guests because of various factors. It might be of interest to watch movies that are not supposed to be for TV translation; a wish to watch entertainment, sport and other popular channels, etc. However, the greatest part of the income is provided by TV programmes "for adults". A channel can be turned into a pay one if it is provided temporarily at the request of a guest or a group of guests. For example, a group of guests asks to arrange a translation of some event in their country or a sporting event with their favorite team, etc.

Will pay channels be popular? It depends on a lot of factors. Of course, quality and content of pay channels affects the demand but it might be not the main factor. The demand greatly depends on the number and quality of free access channels transmitted in the TV system of the hotel. That is why in cases when a commercial TV system is mainly a source of an additional income for a hotel and not just means of prestige, the correlation in quality and quantity between free and pay channels must in favor of the latter. A maximum number of pay channels and a minimal indispensable number of free channels should be offered at a hotel.

A lot of other factors help to increase the number of viewers of the pay channels - like lack of entertainment places around the hotel, bad weather, etc.

The tariffs for the use of pay services are a very important factor that defines an income from the system of commercial TV. The tariffs must be high enough not only to compensate the expenses for installation and maintenance of the TV system but also high enough to provide an income. At the same time the tariffs must not exceed a certain level, so as not to scare away potential customers. The cheaper the main payment for accommodation, the more difficult is to define the tariff for pay services. A long-term analysis showed that the highest tariff for pay TV services must not be more than 7-10 % of the accommodation fee.

Most systems of commercial TV allow taking payment both for all channels together and for each one separately. A day can also be segmented into different tariff periods.

### **Method of taking payment**

A very important factor is how the payment for commercial TV system services is taken.

It seems that the method of billing for the use of a TV channel during a certain time is quite natural. In many cases this method is successfully applied. However, with this method of payment there are frequent conflict situations during settlements. The reason for conflicts is the minimal time given to a guest for free viewing. Guests often say that they watched a channel only for this free period or switched to a pay channel by mistake, etc.

The reason for conflicts is eliminated if the payment is taken for the order of service. In this case guests pay for the use of a pay service within some tariff period after the order.

Practically it happens the following way: the guest switches on a pay channel and watches it within a free period of time (usually 1-3 minutes). After this term the system automatically switches off the channel and offers the guest to confirm his wish to continue watching. If the guest wants to watch the channel, he performs some simple actions suggested by the system (press a "red button" on the remote control device or enter the number of the room, etc.) From the moment of confirmation the sum for payment starts to be calculated.

### **Evaluation of economical efficiency of commercial TV system**

Business-evaluation of the system efficiency is the time of self-recoupment of the system; that is, the time when the income generated by the system fully compensates all the expenses for its installation and maintenance during this period. After this period the system should start bringing profit.

The time of self-recoupment depends on the cost of the system, maintenance costs and generated income.

An objective point for evaluation of the system can be a "specific" income generated by the system per one occupied room per day. This point can be a reference point in working-out of business-plans on the use of commercial systems. An income of pay TV system (4 pay channels) per occupied room per day can be considered satisfactory if it is about 1,5-2 US\$. Using combined tariffs, tariff periods, combinations between the number of pay and free channels and other programme methods, this specific income can be significantly increased.

In case of optimal "circumstances" you can count on the following periods of recoupment:

1. Pay TV system - 20-24 months
2. Interactive system - 30-36 months

### **Where to get it?**

ELAS is a scientific-manufacturing company founded in 1992. It develops, produces, delivers and assembles pay TV systems for hotels. It also carries out guarantee and post-guarantee maintenance of commercial TV systems of various types.

Pay TV systems produced by the company effectively work at the hotels of Russia, England, Cyprus, Latvia and Estonia. In 2002 the company started producing pay TV systems for cruise liners.

Pay TV systems produced by ELAS don't require obligatory replacement of TV sets of a hotel; they provide high universality and are easily adapted for the specifics of a hotel and requirements of the Guests. Software of the systems supports interfaces to all known hotel PMS; it allows remote control and correction of system work regimes through telephone channels.

Commercial TV systems produced by ELAS are highly reliable in work and have a profitable correlation "price/quality."