

# BROADVISION

Q2 (6) 2018

Your personal IPTV/OTT business advisor



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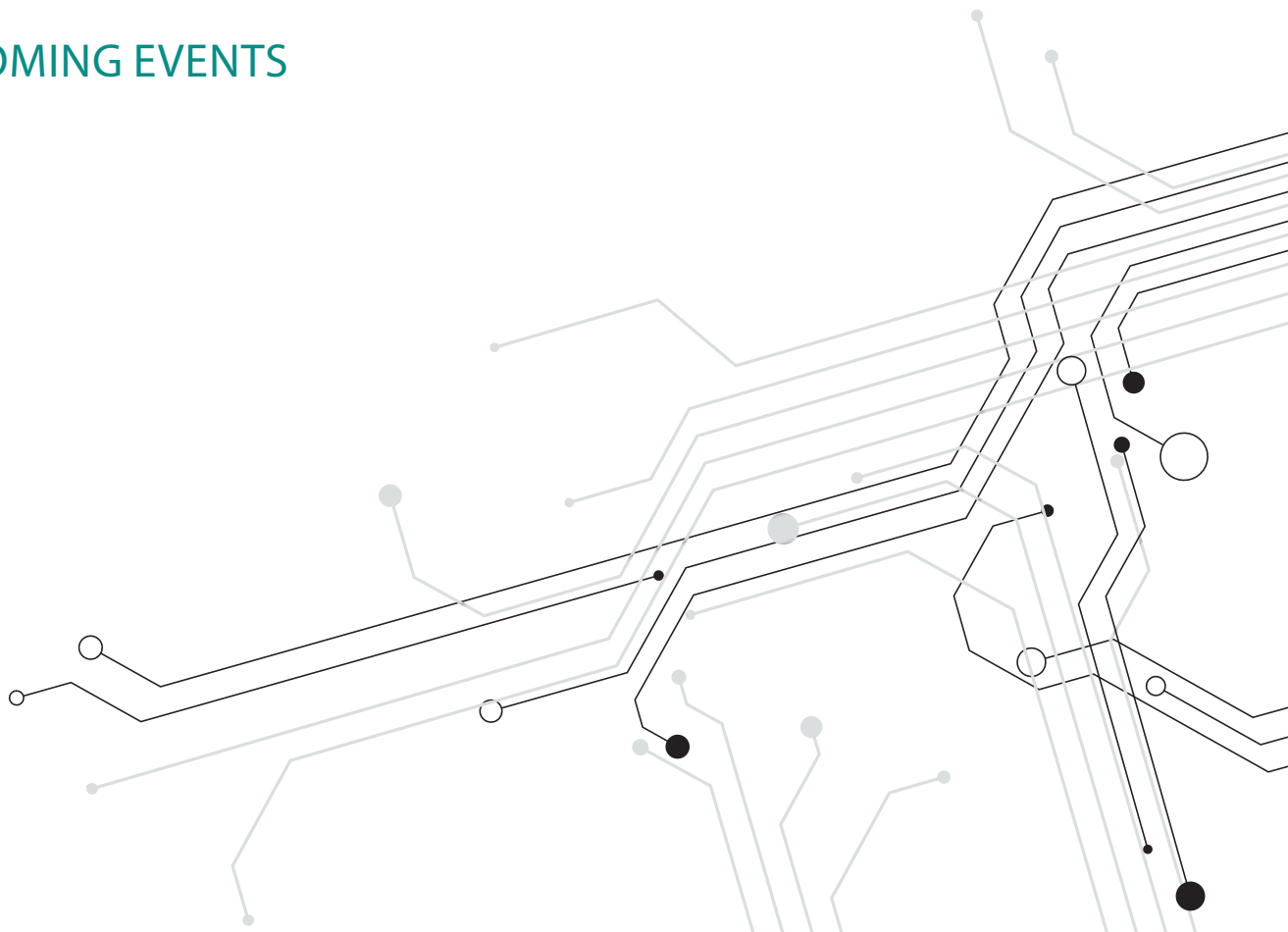
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# **EASTWORLD: PECULIARITIES OF THE IPTV/OTT MARKET OF MEA**

Interview with Egor Maliarov, PayTV Solutions  
Business Development Director, Infomir MEA

Interviewed by Denys Gorbunov



**Together with Egor Maliarov, BDD Infomir MEA, we go off on a journey to the East.**

**We will talk about today's IPTV/OTT trends in the MEA market, analyse the dynamics of its development and learn about the peculiarities of the work of the Infomir representative office in this region.**



Egor Maliarov,  
Business Development Director  
PayTV Solutions, Infomir MEA

## Egor, can you tell us what prompted the creation of the Infomir representative office in the MEA region?

The need for our presence in the MEA region arose out of the rapid growth of Infomir's sales territory. In 2015, MAG set-top boxes were sold in the markets of 92 countries. We analysed the demand and came to the conclusion that the opening of a new office in the Middle East would create optimal conditions for meeting demand in a promising region.

It's been three years. Now our sales territory has expanded to more than 150 countries — largely thanks to the Infomir MEA in particular.

### BECAUSE OF THE OPENING OFFICE IN MEA REGION:



DELIVERY SPEED HAS INCREASED



DELIVERY COST HAS DECREASED



PRODUCT SAFETY HAS INCREASED

## What tasks fell on your shoulders? Was it difficult to conquer a new market?

We deal with a whole range of tasks: sales, logistics, warranty service, business development consulting for clients and partners. Infomir is not only a manufacturer of set-top boxes but also a developer of ready-made solutions.

We also help to integrate our solutions at all stages of project development. Infomir products are in demand in a variety of areas. This has ensured the confidence of our first customers and a good reputation for those who come next.

Now we work with the hotel business, educational projects, Internet service providers, premium cottage townships and advertising services on digital signage.



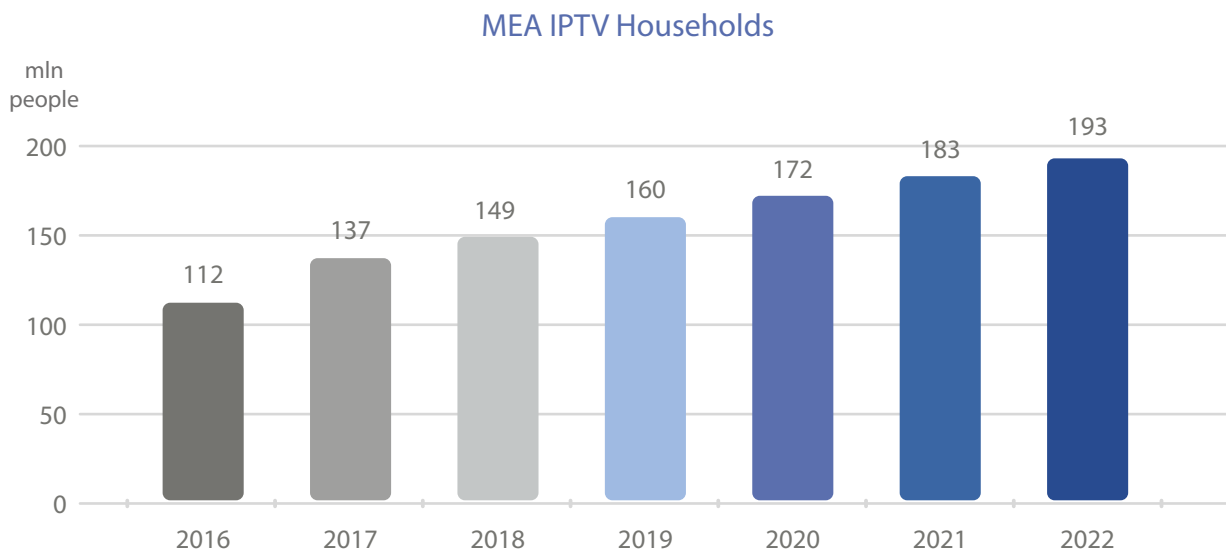
## What key industry events do you recommend visiting?

We try not to miss the main industry events in the region. At a time when business in Western countries is shifting online, local meetings are of particular importance for local project representatives.

Attending events is an excellent opportunity to communicate with our customers who are outside the UAE. Here we can show them the new Infomir solutions and give them the chance to test the products themselves.



For example, we shall be visiting the Broadcast Asia exhibition, the TV Connect MENA forum as well as presenting our stand annually at CABSAT, the largest industry event in the region.

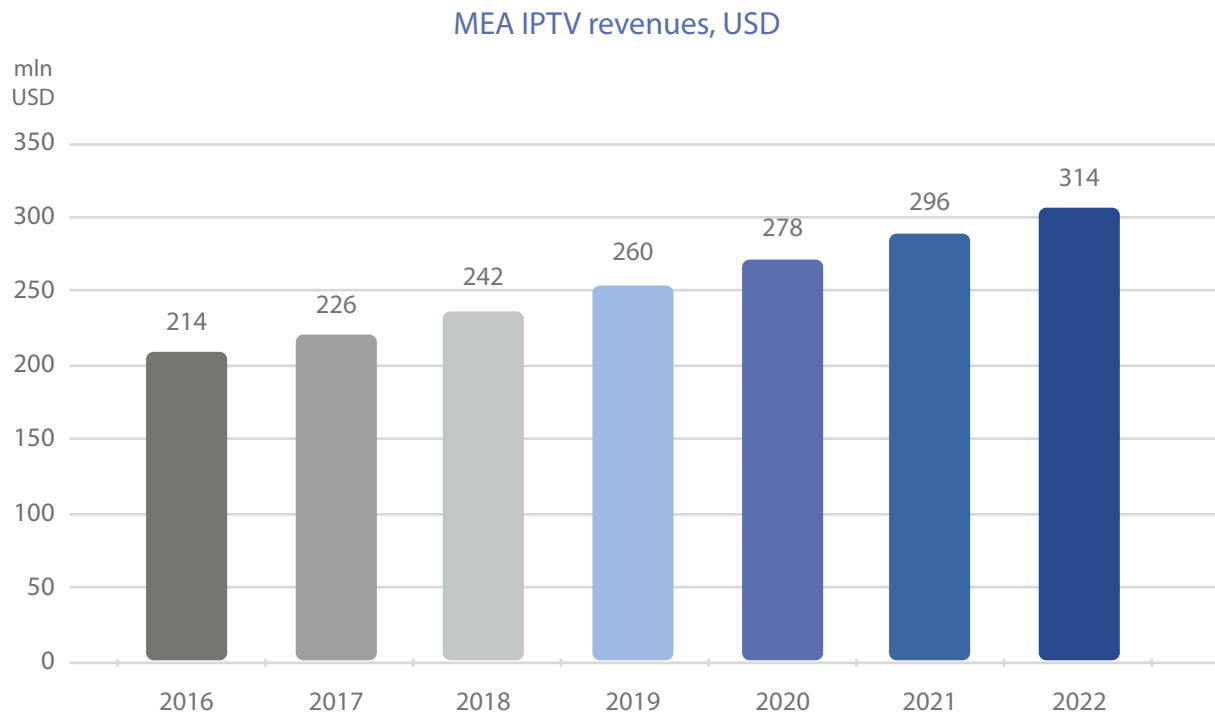


Source: OVUM

## Is there anything special about doing business in the MEA market?

The MEA market is oversaturated with set-top boxes in the low price sector from Chinese no-name brands. Every year, this trend increasingly affects other regions, but China's geographical proximity most notably has a bearing upon the MEA. Because of this, it is very difficult for foreign companies to enter this region's market.

We also had to justify the price difference and explain to clients that our solution is more expensive than the Chinese because, in addition to the main product, we provide a large package of additional services. Today, local projects cannot fail to be interested in value-added services and high-level customer support.



Source: OVUM

## Do you work with companies outside the MEA region?

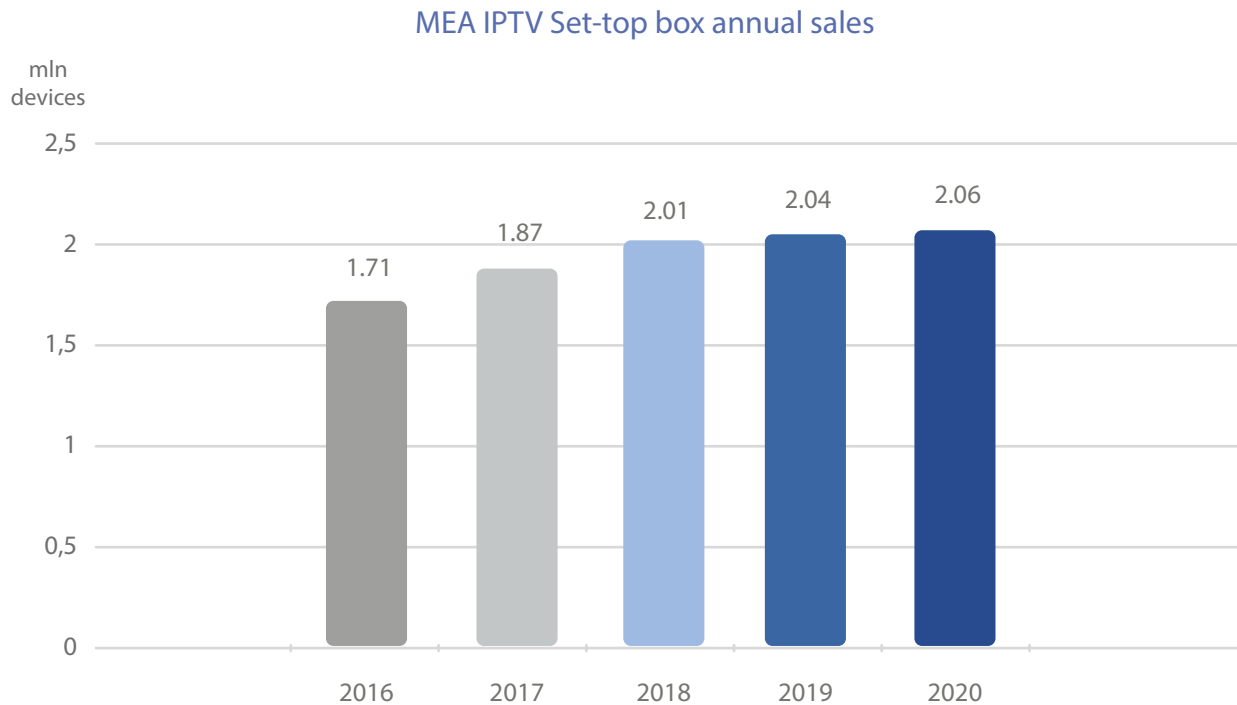
The global status of Infomir means that we don't have to limit ourselves to the geography of the East, but develop our business in, for example, Australia and New Zealand. Together with our partners in the Australian market, Corsair Solutions, we participated in the two most important industry events on the continent:

SMPTE, the largest regional event of the Association of Technical Experts, and Integrate, the largest AV and integration exhibition in Australia.



## Android vs. Linux — what do customers prefer?

Customers prefer Linux because of the stability of this OS and the possibility of its full customization. Out of the Infomir set-top boxes, MAG256 and MAG322 and their modifications with built-in Wi-Fi are the most popular. The demand for these models is explained by their convenience, both for launching a new IPTV/OTT project and for integration into an existing one. In business, time is always money. A quick start means saving resources and an early return on investment.



Source: OVUM

## How did the MEA region react to the MAG410?

Our regional customers who purchased MAG410 are satisfied with the technical support and regular updates, but in general it is quite an expensive product for the local market. Most STBs from Chinese no-name brands run on Android OS, so does MAG410.

Thus, a non-professional and inexperienced buyer may think that in the case of MAG he has to pay more just for the famous brand.



But the truth is that we provide qualified technical and warranty support, which is generally not the case for users of no-name set-top boxes.



Soon, we will replace the MAG410 with two new 4K set-top boxes: MAG424 running on Linux and MAG424A based on Android.



## MAG424A



4K & HEVC  
Support



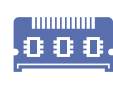
4 ARM  
Cortex - A53



OS  
Android 7.0

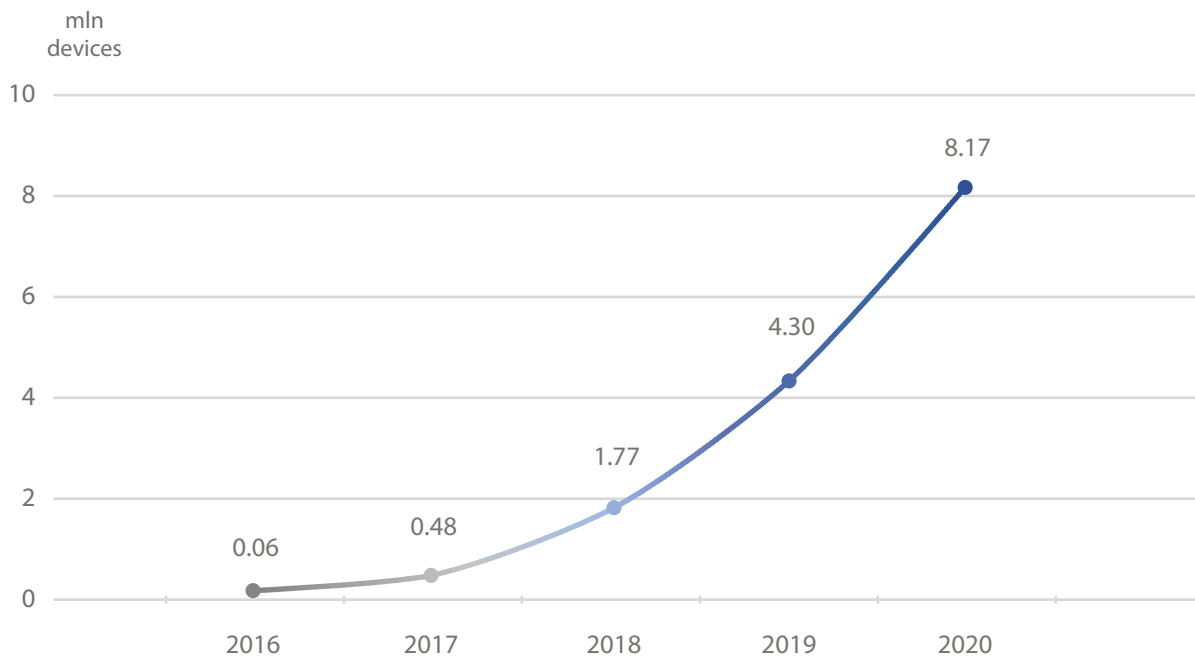


8 GB  
Storage



1 GB  
RAM

MEA 4K-STB install base

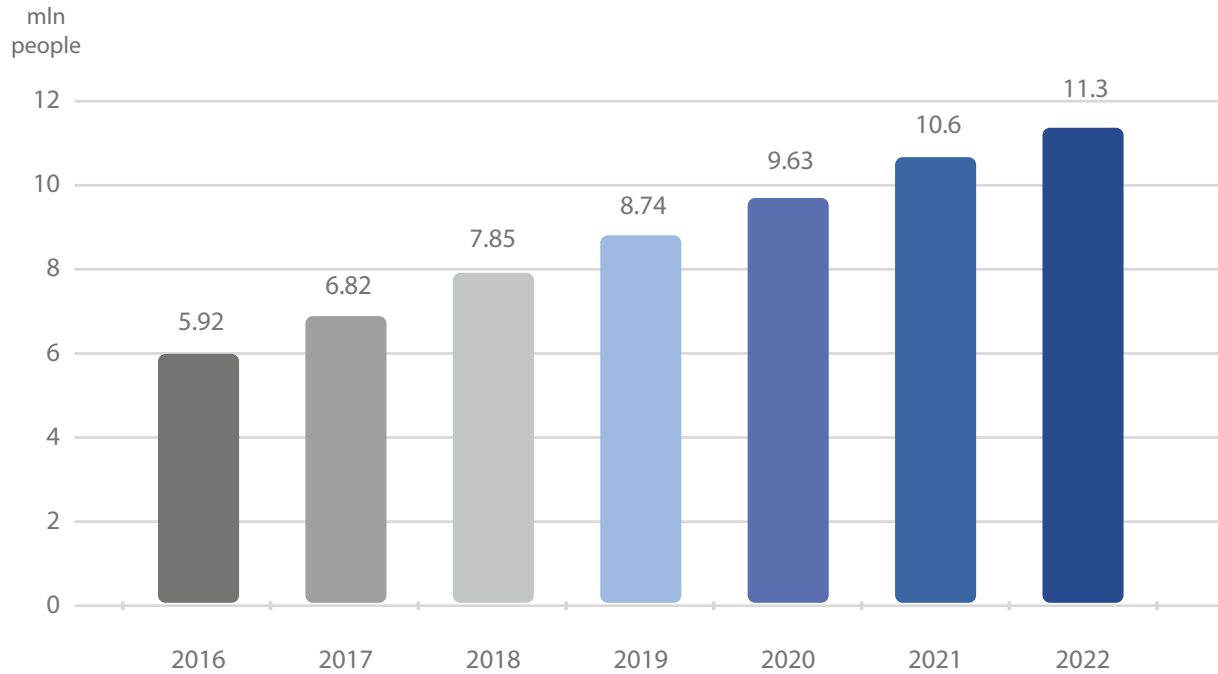


Source: OVUM

## What are the main requirements for software solutions in the region?

Customers, as a rule, prefer integrated solutions. This allows you to exclude the time and resources cost for integration into the project. Our solution, Ministra TV platform, fully meets this requirement. Thanks to the open API, it is integrated with key players in the middleware market for such popular areas of business in the UAE as the hotel business and the advertising sector on digital signage.

## MEA OTT Subscribers

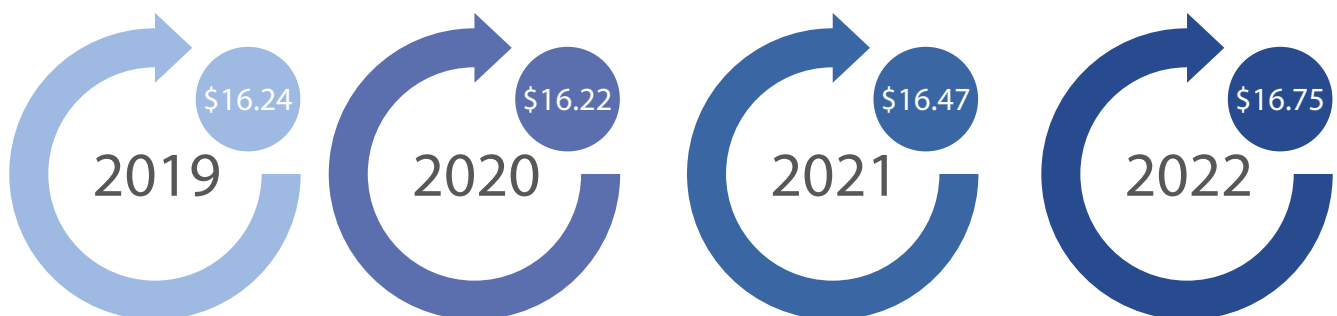


Source: OVUM

## How popular are 4K set-top boxes in the region?

The demand for devices is growing, but is constrained by the lack of content. Statistics for production and sales of 4K TVs eloquently confirm the desire of users to enjoy ultra-high-definition images. The 4K STB market is almost saturated. Most companies have not let this trend go unnoticed. Infomir also has several 4K set-top boxes in its collection, and a few more will soon go into mass production.

## Forecast of MEA monthly IPTV ARPU, USD



Source: OVUM

## Egor, how do you assess the prospects for the industry market in the region?

We constantly analyse the situation on the market. According to forecasts, it will continue to grow. This will affect not only the STBs sales dynamics, but also the subscriber base of IPTV and OTT services. Revenues from these services will also increase. At the same time, don't forget about the contrasts that characterize the region. If in the more developed countries income from one subscriber may be over \$20 with a maximum of \$29 in Oman, in the less developed countries it will not reach even \$5, with a maximum of \$2.5 in Egypt.

Recently, the biggest development in the IPTV sphere has been noted in the UAE, Saudi Arabia, Oman, Qatar, Bahrain, Egypt, Jordan, Lebanon and Morocco. Another seven countries in the region are actively changing obsolete telecommunication networks for optical fibre, and such measures only contribute to the growth of IPTV. These countries are Algeria, Pakistan, Iraq, Kuwait, Libya, Mauritania and Tunisia. The MEA is a very promising region, and we are proud to contribute to its development.



# SOCIAL MEDIA MARKETING IN THE SERVICE OF YOUR BUSINESS

Top 5 most popular social media  
for promoting your IPTV/OTT project.

Written by Denys Gorbunov, PR manager at Infomir



**Today, we will discuss how to choose the right way to promote your service or product using the advertising opportunities of social media. This will keep your advertising budget down and insure you against unfortunate mistakes.**

It is difficult to imagine modern society without social media. The set of tools for the social media promotion of goods and services is constantly growing, attracting like magnet companies with all kinds of goals. There are hundreds of social media.

Yet the largest advertising budgets are localised on only a few, popular ones. Even after reducing their number to the TOP 20 or the TOP 10, a business owner still has to face the fact that his presence on many media will be a heavy burden to him.

Therefore, we have chosen five popular social media, which, according to our opinion and experience, are the best for promoting IPTV/OTT projects. Let's consider them one by one.

## LINKEDIN

LinkedIn provides advanced tools for pinpoint searches for targeted business contacts. Big deals are made here. When creating an account, each participant fills in a detailed questionnaire, most of the questions being related to professional experience.



**A correctly completed participant profile indicates the information necessary to attract a potential employer or partner: place of work, role in a project, proficiency in various skills, and references.**

Advanced filtering of contacts allows you to find people in the right sphere quickly. It is convenient and often helps overcome the barrier between you and the right professional.

This format is appropriate for B2B interactions when a big transaction fully compensates for the time spent searching for and establishing contacts with each customer. With B2C searches for customers, the opposite is true, since a wide coverage

is required with minimal resource costs. Keep this factor in mind when selecting a social platform for interaction with your customers.

LinkedIn also enables you to promote products and services using the internal PPC. The advantage of this tool is that when you set up an advertising campaign, you can specify pinpoint targets within your target audience: by place of work and speciality. This allows you to get more targeted traffic than you would when using other social media, though you will have to pay more for the result. For example, one click on an ad can cost you 20\$.

You can also create a company representative page on the media and publish news and other useful materials on the corporate page. This will affect your company image positively, as it will allow your employees to add a link to it in their profiles and become a real lead-generating tool. If you are an employer who often searches for job vacancies, creating your company profile is a step that you cannot ignore.

**Another way to draw attention to your service or product is to actively participate in the profile community discussions. Every social media offers such opportunities, and you are probably already using them comprehensively, so we don't need to dwell on this.**



Recommended for:

- ✓ big B2B customer searches
- ✓ personnel searches



Not recommended for:

- ✗ B2C customer searches



## INSTAGRAM

Instagram is a rapidly growing social media. Every year it wins over more and more territories and age groups. To do promotions via Instagram, you need to create an Ads Manager Cabinet on Facebook. It is convenient to plan your advertising campaigns using this. An undeniable plus of promotion via Instagram is the ad formats. You can't be afraid that users will not notice your banner ad in the corner of the screen since the ad will be shown in the feed or thread of stories



and will definitely catch the eye of subscribers. In terms of targeting, Instagram is much inferior to LinkedIn: the basic information about users here is their location. At the same time, the cost of a click on an ad can be tens of times cheaper here than on LinkedIn, at about 0.2-0.5\$.

Thus, Instagram provides wide advertising coverage for a relatively low budget.

There are no communities on Instagram, but you can create an account for a project or a responsible expert. This social media is appropriate if you regularly generate interesting visual content: photos, videos, product reviews, etc.



**But before creating such an account, make sure that:**

- your audience uses Instagram
- you know how to attract and keep their attention

As on other social media, one can discuss questions in the comments on publications, but on Instagram, this is not so much a discussion, as chaos.

Recommended for:

- ✓ project promotion to an audience with a wide age range
- ✓ project promotion in cities or districts



Not recommended for:

- ✗ projects targeting a 35+ audience



## TWITTER

One of the most popular social media in the world can boast of a whole toolkit under the Twitter Ads Manager.

Twitter Ads Manager offers the following types of advertising:

- promoted accounts, referring targeted users to your offer,
- promoted tweets, for making your tweets appear on user channels or in Twitter search results,
- promoted trends, for placing a trend topic on the left side of the page.

In Twitter Ads, user segments are targeted by age, gender, location, and interests. Twitter has an interesting option that distinguishes it from other social media: targeting by keywords in the tweets. To activate this function, you have to specify a list of targeted queries when launching an advertising campaign. This done, ads will be shown to users who have used the word in their tweet or other interactions.

The cost of advertising on Twitter depends on the type of ad and targeting setting. The price system is based on bidding, i.e. setting the maximum amount of money you are willing to spend on each activity. On this social media, as on others, the budget limit is indicated, and when it is reached, the ad impressions stop.



**Twitter helps you by offering bidding options to optimise your campaign.**

Recommended for:



- ✓ promotion among audiences in the US or Western Europe
- ✓ promotion of products or services analogues of which are already discussed on Twitter

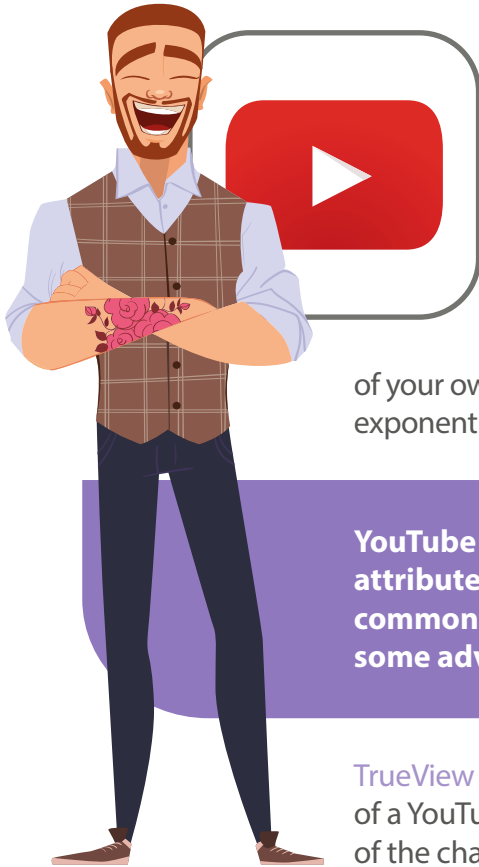
Not recommended for:



- ✗ projects outside the specified territories



## YOUTUBE



YouTube is, on the face of it, an ordinary video hosting platform, but the right approach can turn it into a powerful customer-attracting tool. This is a media platform for potential buyers to review product offers, as well as the place for the audience to communicate with the brand. You do not need to create your channel here. You can take advantage of the advertising opportunities of the media itself, which will help you to show the benefits of your product better and narrate your own expert experience. The comprehensive approach implies publication of your own video, as well as the placement of advertisements, that will exponentially increase the impact on the target audience.

**YouTube will help you to set the targeting using specific attributes: by topic, keywords, or groups that share common social and demographic criteria. Let's consider some advertising tools in more detail.**

**TrueView In-Stream** — starts as a pre-roll, a mid-roll, or a post-roll. The frequency of a YouTube commercial activation depends on the desire of the channel owner who profits from the impressions. Promotion is considered effective if a user watched the entire commercial, gave it more than thirty

seconds, or performed certain actions: clicked on a link to the channel, website, or specific video. Each of these steps is considered a viewing confirmation, which is then paid.

**Unskippable pre-roll** — appears at the beginning, in the middle, or at the end, as well as on the Display Network resources. Its duration is a maximum six seconds, and one cannot skip it. It differs from the previous tool in its payment method: every 1000 impressions are paid.

**True Video Discovery** — a banner with a video preview on different YouTube pages and Display Network websites. Appears on the search page before other videos, as an overlay during the viewing and among the recommended videos. Every ad click is paid if the user goes to the video view page. Prompts — are embedded in any video and generated in the Video Manager of your YouTube account. The Prompt body may contain a link to a channel, website, or video.

There are other tools that are configured through the Google AdWords contextual advertising service. To make use of this, you will need a more in-depth study of the issue or the help of a digital marketer.

Recommended for:

✓ Own video product reviews or other topics



## FACEBOOK

The most popular social media in the world is constantly expanding its possibilities. The Facebook Ads Manager Cabinet changes as well. We will focus on several tools that, in our opinion, will be the most useful for promoting your business.

**With a comprehensive approach, Facebook creates a branded page for your company: your online store, provider, service, etc. And on which, we recommend using three main options for promotion**



**Page promotion** — this is a classic campaign to attract new subscribers to your page. Do not confuse it with website promotion. Users will see an ad with the call-to-action button, inviting them to 'Like' the page. If you have a loyal customer database, we recommend that you invite them to subscribe before you launch an advertising campaign. Thus, you will secure a critical number of subscribers to create a minimum credit of trust for your page. This type of promotion is especially important for your reputation. Many Facebook users are used to evaluating the page by the number of subscribers: the more subscribers the page has, the more highly they trust it. In this way, you will create a more trustworthy impression.

**Promotion of publications** — the topic of content marketing is fairly deep; we will prepare separate, more detailed material on content creation in the future. For now, in this article, we will focus on its promotion. Arriving on your page, a person first evaluates the design of the avatar and the cover, then looks at the number of subscribers and the amount of activity under the publications. Three of these criteria allow a casual visitor to form his first opinion of the brand. If no one likes and comments the postings, a potential customer will find your product or service irrelevant.

The algorithms for displaying publications in the Facebook feed are constantly changing. Recent trends, alas, do not favour business pages publishing. If you do not use paid promotion, your publications are unlikely to catch the eye of your target audience.

We recommend that you put at least 1-2\$ into the budget to promote each publication. The effect will increase in tandem as the amount increases.

**Website promotion** — without exaggeration, this is the most important promotion line, as it provides a direct stream of leads to your website. To launch it, you will first need to configure detailed targeting by location, gender, age, interests, and other parameters; this will help you to optimise the allocation of your target audience of potential customers. Then you determine placement and your maximum advertising budget. At this stage, you can immediately launch advertising on Instagram. Then you post an ad for users to see.

Please note that Facebook Ads Manager allows you to test the display of ads on the screens of various devices. Before launching the campaign, make sure that everything meets your expectations and select the call-to-action button.

When examining the Facebook Ads Manager more closely, pay attention to pixel customisation, the launch of an advertising campaign targeting the existing email database, as well as using UTM tags for tracking and more accurate online analytics.

Recommended for:

- ✓ projects that rely on an integrated approach and can use combinations of various promotion tools.

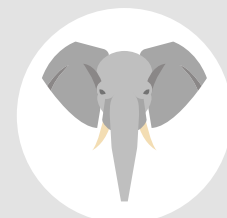


## COMMON MISTAKES WHEN CREATING SOCIAL MEDIA COMMUNITIES:



Relying on content only. It's not enough to create a page and post on it. Inviting the initial critical number and subsequent promotion targeting your audience are vital steps in community development.

More does not mean better. A lot of pages are created on different social media, but the resources to develop them are insufficient. As a result, a number of 'dead' accounts are formed, which give a negative impression to potential customers.





The chosen media is popular, but not among your customers. You can expend a lot of effort and resources to promote via one media, but what's the point if your audience prefers another? Do the research before the campaigns start.

Too much advertising. Put yourself in your customers' shoes: there is too much information around. Share not only the benefits of your product or service but also useful cases on related topics that are of interest to your subscribers.



Saving on design services. The first impression cannot be made twice. A low-quality visual design of the community or posting may permanently discourage people from visiting your page again, not to mention buying.

Misinformation. Formulate the advertising message as clearly as you can, so as not to mislead a potential customer. For example, if you are selling MAG set-top boxes, the users should understand that these have no built-in content.



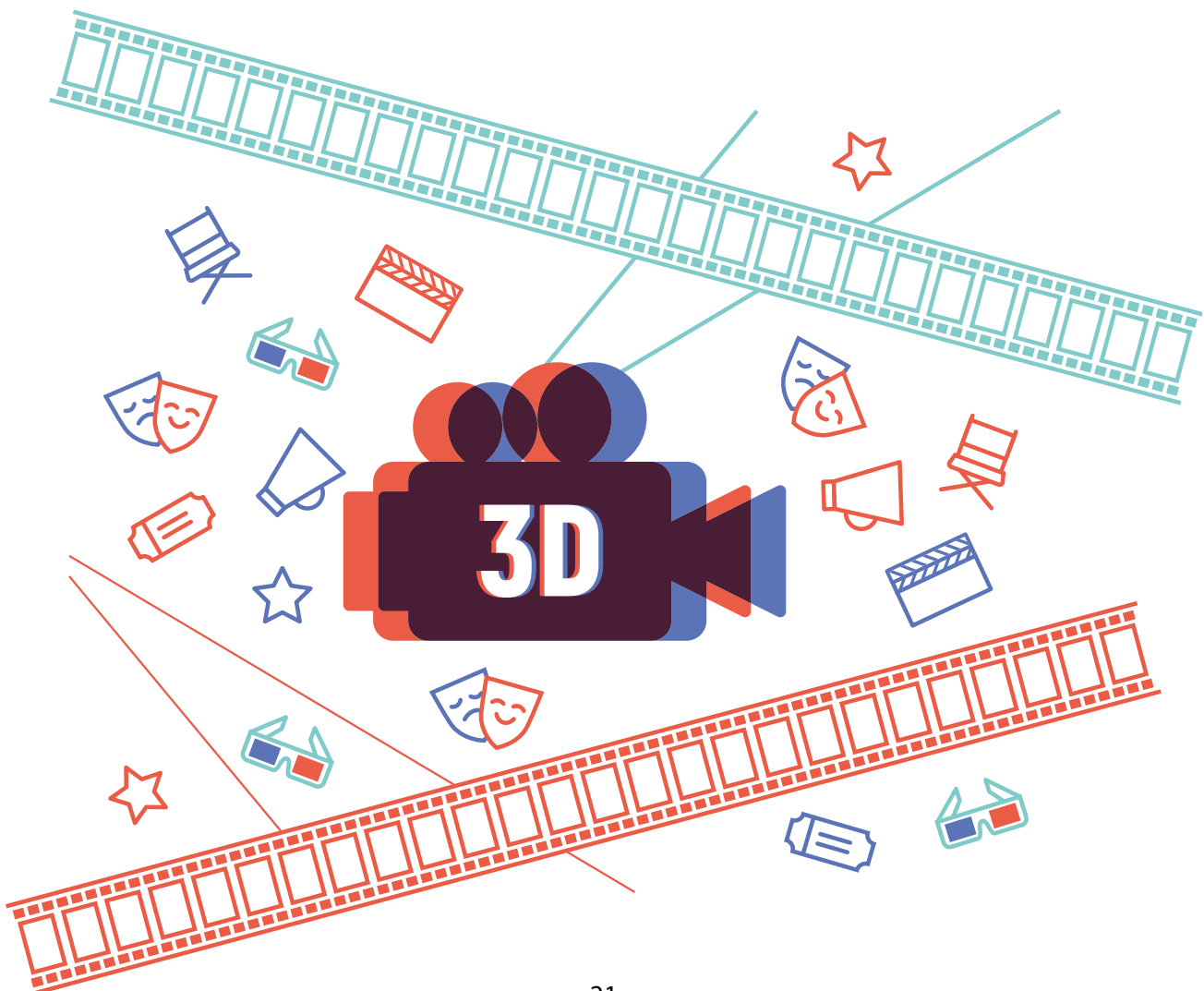
**We hope that the results of your promotion meet your expectations, irrespective of the social media and advertising tools you choose.**



# A WIDE-ANGLE SHOT OVER 3D

The real multifaceted nature of 3D technology,  
and how the illusion of depth arises.

Author: Anna Novikova



**In recent years, the market hasn't stopped debating 3D TV: is it a cheap trick or a confident step towards creating a more sophisticated viewer experience? Often, what is missing in this debate is the fact that 3D is not a single technology, but a set of dozens of different methods, each with its own advantages, disadvantages, and areas of application.**

## HOW 3D WORKS

Almost every modern method of creating a three-dimensional image is based on the physiological features of human eyesight. Our eyes are located at a distance of 60–70 mm from each other, which allows us to see the world from two positions simultaneously. As a result, the left and the right eyes receive images of the same object at different angles.

These images are called a stereopair. Analysing the difference between the images received, our brain makes an assumption about how far away from us the observed objects are.

To create a 3D effect in the cinema, the principle of separate viewing is applied: an image is shown to each eye that is intended for that eye only.

The separation itself occurs in various ways, each of which has its own pluses and minuses.

## ANAGLYPH

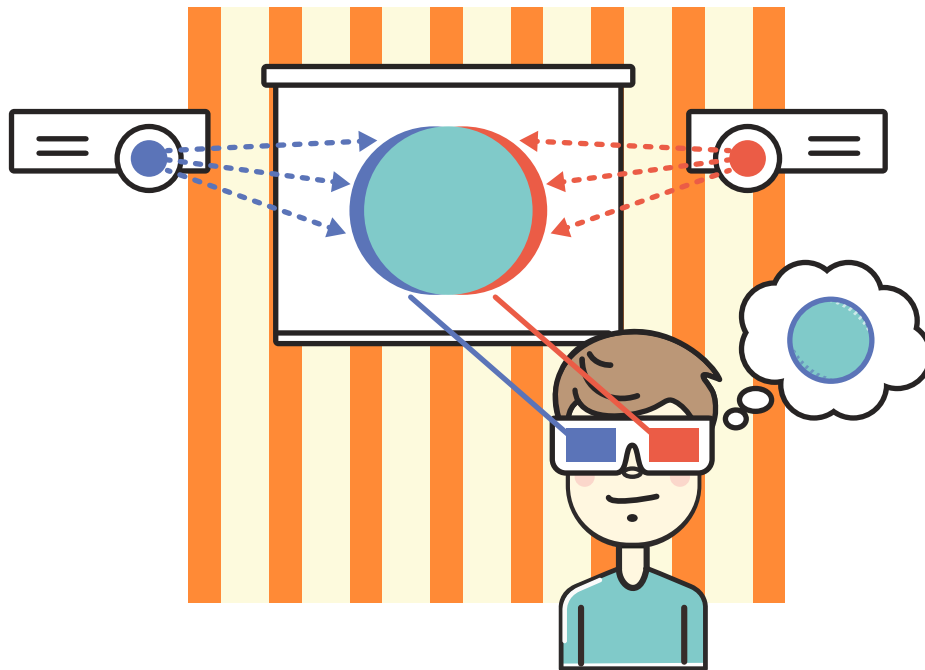
This method is simply what most people know as classic 3D.

The technology is over a hundred years old. It is based on the biological structure of the human eye. On our retinas, there are three types of photosensitive receptors — cones. Each type perceives only one of the primary colours: red, blue, or green.



The illusion of depth is achieved by dividing the image into two channels. For example, red and cyan which is a mixture of blue and green. So, the resulting layers are superimposed with a slight shift. The viewer, using glasses with lenses of the same colours, receives a separate monochrome image for each eye.

The method's main drawback is incomplete colour rendering. The image is perceived as single-tone or achromatic. The viewer quickly gets used to the effect. However, returning to the real world from a red-blue one is sometimes very painful.



In its classic form, anaglyphic 3D is almost never used. However, its successor, super-anaglyph, continues to be used in Dolby 3D technology. In the new design, single-tone lenses are replaced by special interference filters, which lessen the distortion of colours to some extent. But for all that, the technology continues to lose its fans.



#### Advantages

**+ Spectacular appearance**



#### Disadvantages

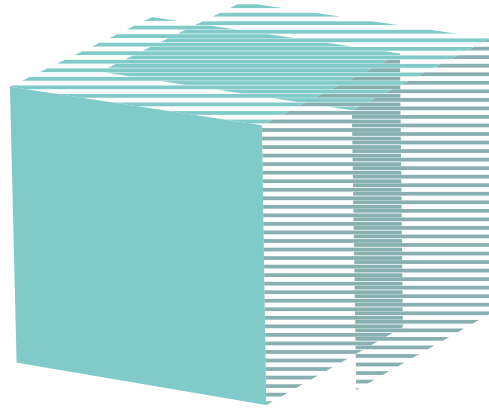
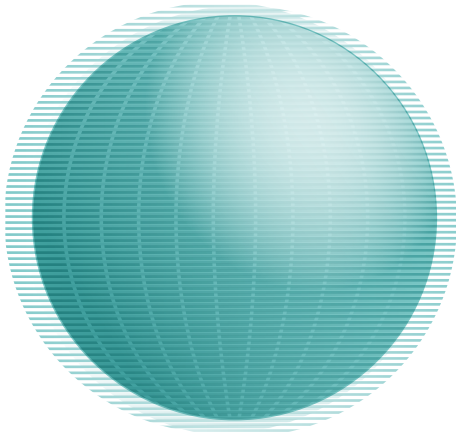
**— Poor colour rendering**

## INTERLACED METHOD

An image for one eye is recorded in even, interlacing lines, and in odd lines for the other. The result appears as a full-colour image with a 'comb' effect. The imitation of three-dimensionality is achieved by combining images using deinterlacing, a technology for creating a single frame from two half-frames of the interlaced format for output to monitors with non-interlaced scanning.

The image's vertical resolution is reduced by half, while its colour rendering is retained in full.

This method is rare. It was previously used in making 3D DVD discs. Today it is experiencing a second wave of popularity, now with a passive separation of camera angles in 3D monitors. Even lines are passed through one kind of polarisation, while odd lines pass through another. All you need for viewing is simple, affordable polaroid glasses.



### Advantages

- + A simple and inexpensive method
- + No chromaticity loss



### Disadvantages

- Reduced zoom
- On close viewing, black horizontal lines appear

## ECLIPSE METHOD

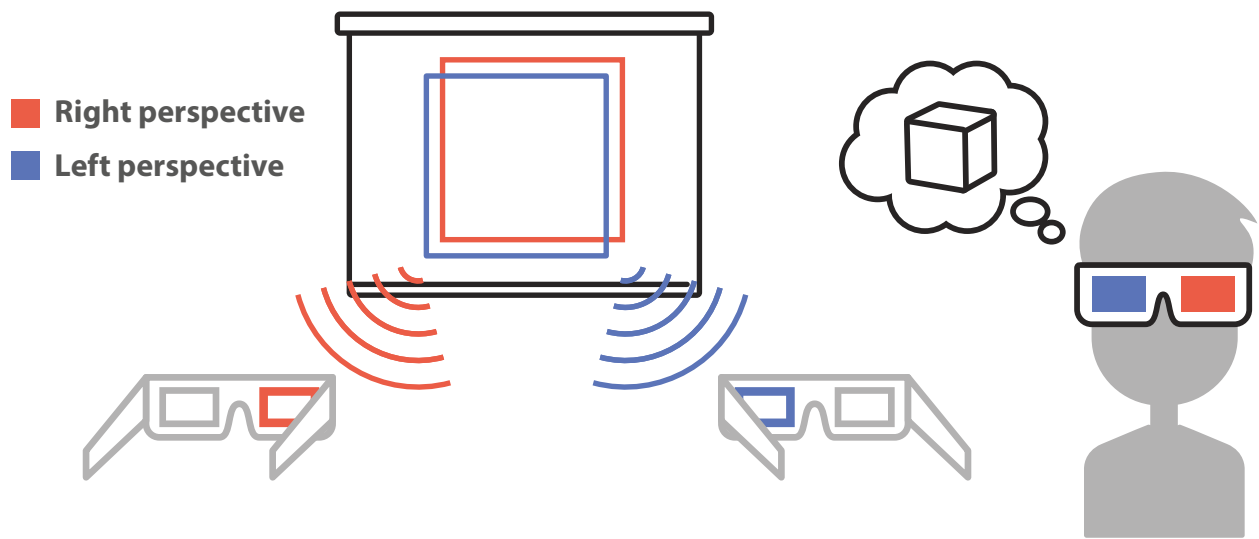
This method involves an alternating showing of images on the screen intended for the left or right eye. At the same time, the lenses of the glasses are synchronously darkened so that each eye sees only its own intended image.

The change of frames occurs at a very high frequency, over 120Hz. The effect of persistence, which is the brain's ability to combine frequently changing static frames into a moving image, causes the observer to think he/she is seeing a qualitative three-dimensional image.



This method was pioneered in 1922 in the Teleview system. Viewers were offered the opportunity to watch movies through a special mechanical shutter.





With the development of new technologies, the mechanical shutter was replaced by liquid crystal shutter glasses, but the operating principle remained the same. All of the method's advantages can be gauged when viewed using XpanD and nVidia 3D Vision technologies.



#### Advantages

- + Full chromaticity and resolution
- + No special screen required, suitable for home viewing



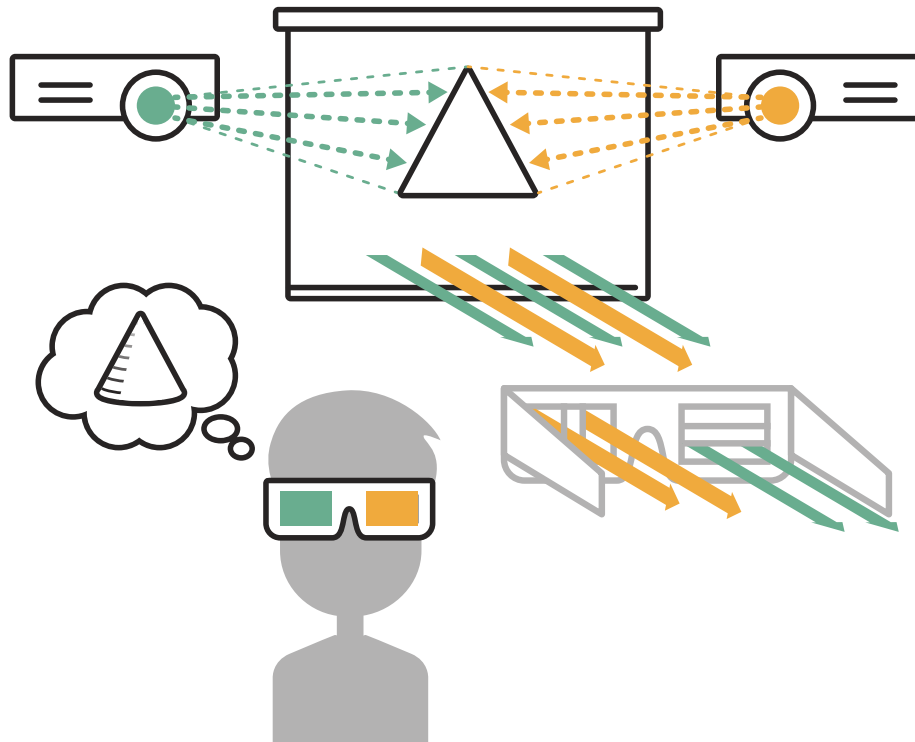
#### Disadvantages

- Expensive equipment and production
- High eye fatigue

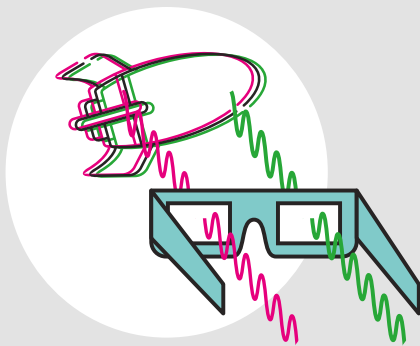
## POLARISATION SYSTEMS

The essence of this method is to superimpose frames with different light polarisations: the 'left' frame has vertical polarisation, while the 'right' frame has horizontal polarisation. The lenses of the glasses are also filters that pass images of the corresponding polarisation. Thus, the left eye sees only the 'left' frames, while the right eye sees only the 'right' ones.



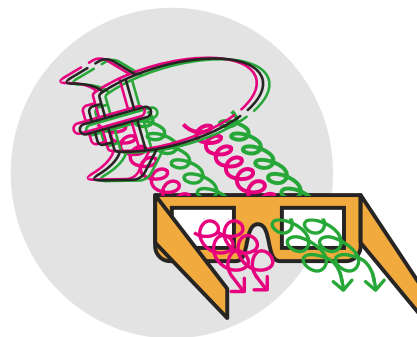


The manner of viewing depends on the type of polarised glasses:



**Linear polarised** glasses demand that the viewer keeps his/her head at the same level. When tilted or rotated, the filters stop transmitting light, and the 3D effect is lost. This method is used in IMAX 3D cinemas.

**Circular polarised** glasses have special built-in analysis filters, thanks to which viewers see an entire three-dimensional image from any convenient position. RealD Cinema, MasterImage, Volfoni SmartCrystal are technologies based on the circular polarisation principle.



Unlike previous methods, polarisation allows one to get a full-colour image with maximum resolution. However, this technology requires significant costs. For a quality display with preservation of polarisation, you need a screen with a special silver coating. The requirements for image brightness are also increased, as polarisation filters absorb up to 70% of the light.



#### Advantages

- + High quality images
- + Glasses at user-accessible prices



#### Disadvantages

- Special equipment is required
- Not suitable for home viewing

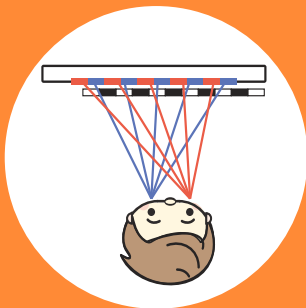
## DEPTH AND SOLIDITY WITHOUT GLASSES

**3D does not always require glasses.** Many other technologies allow viewers to enjoy a three-dimensional image without additional accessories. This method is called autostereoscopy.

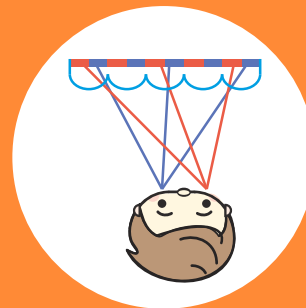
The image on the screen is divided into narrow vertical stripes, alternating for left and right eyes. In front of the screen, there is a raster with the same pitch, hiding from each eye the images that are not intended for it. At a sufficient distance from the screen, the stripes merge into a single halftone image.

### A raster may be of two types:

A parallax barrier. It consists of vertical opaque stripes, with thin slits between them.



A lenticular lens is a construction of planoconvex cylindrical lenses. The lenses refract the light from the screen in such a way that each eye receives only the correct part of the image. The same principle is used to create stereo postcards.



The method is not widespread in cinematography, but it is fairly common in smartphones and game consoles.



### Advantages

- + Doesn't require glasses.
- + Applicable for a wide range of devices



### Disadvantages

- Works only for certain angles and screen sizes
- Vertical resolution is reduced twice
- Expensive user equipment

Despite the ongoing debate, 3D video playback technology continues to evolve. Companies offer new solutions and perfect the old ones.

Which method will be market leader in the near future? Will users' interest in 3D TV diminish? What is your opinion on this?





Powerful basic set-top box that  
minimizes your network load

# MAG324



New ergonomic design



OS Linux



HEVC



Built-in Wi-Fi



3D video playback

# CONNECTING THROUGH TIME: WHO PREDICTED AND WHO CREATED THE INTERNET

The most incredible predictions and forward-looking inventions that have divided the history of mankind once and for all into BEFORE and AFTER the Internet.

Author: Anastasia Tsugulskaya



We sometimes think that everything has already been invented. Who is going to come up with the idea of reinventing the pen or the light bulb? Yet there is a special category of people called innovators. They not only feel the needs of their contemporaries but create things fundamentally different from anything ever dreamed up before. This is precisely how the telephone, the radio, the TV set, and, of course, the Internet came about.

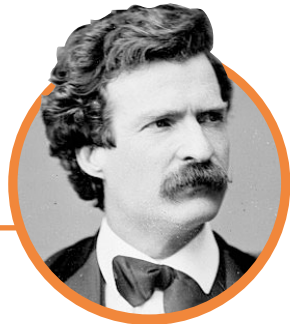
In the beginning was the Word. Who amongst science fiction writers managed a glimpse into the future and predict the emergence of the world wide web? Did gifted scientists just carry out the ideas detailed in intriguing science fiction?

We are going to tell you about the most incredible predictions and forward-looking inventions that have divided the history of mankind once and for all into BEFORE and AFTER the Internet.

In 1898, the writer **Mark Twain** foresaw the emergence of the Internet in his short story From the 'London Times' of 1904. He described an unusual device called a telectroscope that enabled a person to watch another person and find out the latest news. The writer assumed that all the necessary information would appear on a big screen.



## 1898 Mark Twain



**The daily doings of the globe were made visible to everybody, and audibly discussable, too, by witnesses separated by any number of leagues.**

## 1960 Joseph Licklider



**A scientist spends much of his time on mechanical work, which can be assigned to a computer, and the computer should be used as a means of automating the routine work.**

**Joseph Licklider**, an American scientist, is rightly called the first IT psychologist, who came up with the idea of an Intergalactic Computer Network. The essence of the idea is very simple, as are all the ideas of geniuses: any person living on Earth exchanges information or files with any other person within a single network.

In 1960, Licklider publicly rationalised the practical necessity for creating computers. He dreamt of free access to the resources of several computers simultaneously for everyone. He was convinced that the computer should play an important human-supporting role.

From 1962 to 1964, Licklider developed an Internet prototype: a computer network called ARPANET.

**ARPANET**  
THE FIRST INTERNET

**Murray Leinster**, an American writer of science fiction, in 1946 described in his short story *A Logic Named Joe* a worldwide network of integrated computers, although he often replaces the word 'computer' with the fictive term 'logic'. Leinster detailed how computers would be involved in many areas, from banking to flight control.

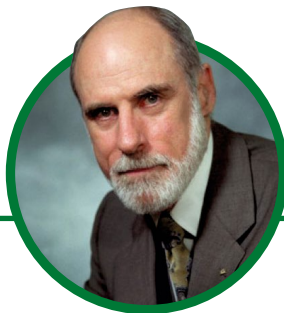


## 1946 Murray Leinster



**If you punch for the weather forecast or who won today's race at Hialeah or who was the mistress of the White House durin' Garfield's administration or what is PDQ and R sellin' for today that comes on the screen too. The relays in the tank do it.**

## 1978 Vinton Gray Cerf



**You created your own universe and you were master of it. The computer would do anything you programmed it to do. It was this unbelievable sandbox in which every grain of sand was under your control.**

**Vinton Gray Cerf** is an American scientist who has been dubbed the Columbus of the Internet. He developed a TCP/IP data transfer protocol that linked servers and opened access for users to any information on the Web. The TCP/IP protocols package is still considered to be the standard for data transmission. In 1978, the protocol was divided into TCP and IP and five years later, the TCP/IP protocol stack was used by the originators of the ARPANET network.

This ideas man was the first to create email: MCI Mail. Cerf stated in discussions with his contemporaries that he sincerely believed a pocket computer to be more than just science fiction.





**Arthur C. Clarke** was the first to describe the laptop; he also traced the development of artificial intelligence. But the most striking thing by this science fiction writer is the realistic description of the World Wide Web he gave in 1976.



**1976**  
**Arthur C. Clarke**



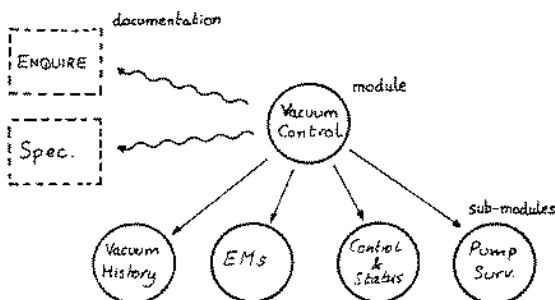
**We're going to get devices which will enable us to send much more information to our friends. They're going to be able to see us, we're going to see them; we're going to exchange pictorial information, graphical information, data, books, and so forth.**

**1994**

**Tim Berners-Lee**



**I want to build a world in which I'm in control of my own data and the master of it.**



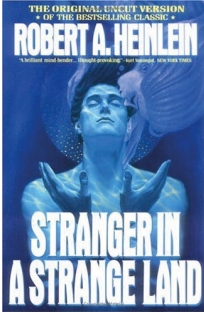
**Tim Berners-Lee** is an inventor who proposed the concept of the World Wide Web. He also wrote a simple browser for editing and viewing files. When the browser was created, it ran only on NeXT computers, which were out of fashion at the time. Yet a few years later, Berners-Lee and a student at the Leicester Polytechnic created a browser for UNIX and Microsoft OSs.

This scientist created a programme called Enquire, which used the method of random association; something more refined became the basis of the World Wide Web principle. In the summer of 1991, Timothy Berners-Lee unveiled the world's first website.

In 1994, Berners-Lee founded the MIT World Wide Web Consortium (W3C) at the Laboratory, which is still actively involved in ensuring stable and continuous development of the Internet.



**Robert Heinlein**, an American writer of the mid-twentieth century, described a television search engine in his novel *Stranger in a Strange Land* which was an analogue of modern Internet portals.



## 1993

### Marc Andreessen

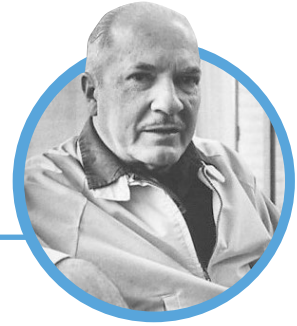


**By then, every table, every wall, every surface will have a screen or can project. Hypothetically you walk up to a wall, sit at a table and talk into an earpiece or eyeglasses to make a call. The term is ambient or ubiquitous computing.**



## 1950

### Robert Heinlein



**Opposite his chair was a stereovision tank disguised as an aquarium; Ben switched it on, guppies and tetras gave way to the face of the well-known Winchell Augustus Greaves.**

**Marc Andreessen** is the co-author of the first web browser. The American businessman has been described in a few simple words: 'He changed the Internet.' The simple but accurate statement contains a genuine love for technological development and the desire to be part of it.

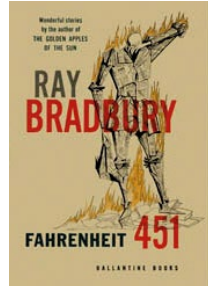
Marc showed the world that the Internet was easier and closer than it seemed to be. In 1993, he created the Mosaic web browser, which was user-friendly even for inexperienced computer users.

He elaborated an easy-to-understand graphical interface, the Next and Back buttons. The Mosaic browser has become the prototype of all modern web browsers that we've come to know so well: Opera, Google Chrome, Mozilla Firefox, and Internet Explorer.

Andreessen is currently working on a new project: he is developing a browser for Facebook, which, according to the developer, will become the browser of the future.

**Ray Bradbury** in his cult novel Fahrenheit 451, published in 1953, literally predicted the emergence of social media. However, in this dystopian novel, the writer comes to a very disappointing conclusion: that people will replace personal with artificial communication and become hostages to technology.

Bradbury described the modern wall screen as a means of easy communication between people over great distances: the prediction came true in 2004 with the emergence of the first major social media Facebook.



## 2004 Mark Zuckerberg



**Every hundred years, the media undergoes some changes. Now is the time for a total exchange of information between specific people. This is the future of online advertising: nothing will work better than a recommendation from your friend you can see on his page.**

## 1953 Ray Bradbury



**They get in our way, they take our time. People spend too much time working on their computers. They are chattering too much, instead of listening and hearing each other.**

**Mark Zuckerberg** is not just an outstanding programmer and businessman in the field of Internet technologies, but the person who created Facebook, the most popular social media.

Zuckerberg skilfully changed the status of the Internet, making it part of our everyday lives and opened the world up to the possibilities of virtual friendship. As a schoolchild, he created simple computer games together with his classmates, and in 1996, when he was 12, he presented a prototype of social media and called it ZuckNet. The invention of this young genius helped the members of his family to communicate virtually over the local network.

When Mark studied at university, he developed the Facemash website, enabling Harvard students to vote for one another's photos. Later, a modified and newly-designed Facemash was transformed into the well-known Facebook, and now we can't imagine the modern Internet without it.

## What inventions will become part of our everyday lives in ten years?

Scientists and fantasists agree that, in the near future, we will be unable to do without the help of robots and flying taxis, but smartphones, as we know them, will cease to exist. What will be the future of the Internet, as we know it: TV, cinemas, online games, and shopping?

Perhaps we should search for the answers in the works of modern science fiction authors.

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14-18 September 2018

Amsterdam, Netherlands, RAI Amsterdam

Hall 14, Stand 22



### NAB Show NY'2018

18-19 October 2018

New York, USA, Javits Convention Center

Booth N1255



## EDITORIAL:

BROADVISION magazine is a quarterly online periodical from Infomir's marketing specialists devoted to the IPTV/OTT industry and modern technology. We are happy to present our second this year issue.

We hope you like reading our magazine just as much as we like working on it. Sign up for our newsletter and share the issue on social networking sites. This is the best way to show us that we are doing the right thing.

Tell us what you would like to see on the pages of BROADVISION next year. E-mail us your suggestions and ideas at **[broadvision@infomir.com](mailto:broadvision@infomir.com)**.

Let's grow together!

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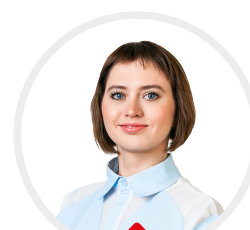


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