Konstantin Perskiy – Russian electrical engineer, the man who coined the term “television” 110 years ago

Oleg Valentinovich Makhrovskiy

The Bonch-Bruevich Saint-Petersburg State University of Telecommunications, Telecommunication Technology & Biomedical Technical Devices Department, Saint-Petersburg, Russia, makholeg@ya.ru

***Abstract* – In this paper, we describe how the term “television” and its related terms were introduced. We explain why and how this neologism was coined and briefly consider past and present definitions of television. We also briefly present a biographical information about K.D. Perskiy. The past international projects, related with term “Television” and some results of R&D on cable TV networks in these projects, reflecting rapid development of new information and communication technologies in sphere of broadcasting are outlined. Finally the basic tendencies which, in opinion of the author, will define development TV Broadcasting the nearest decade are considered.**

***Index Terms* – Broadcasting, broadband, information communication technologies, service integration, television**

I. INTRODUCTION

The term “Television” - one of the greatest achievements of science and technology celebrates 110 anniversary. The TV in Russia began to function on a regular basis as from 1931. The term “Television” so for a long time and has strongly taken roots in our consciousness, that today it is difficult to explain and imagine existence of other terms which tens years after the term “Television” appearance used in publications.

For the first time this term was included in practice as “television”, that has allowed an occasion to many foreign historians to allocate with its French origin. Immediately was extended worldwide, a new word long time did not get accustomed in Russia.

Constantin Perskiy had coined the word “television” in a paper read to the International Electricity Congress at the International World Fair in Paris on August 24, 1900. Perskeiy's paper reviewed the existing electromechanical technologies, mentioning the work of P.Nipkow and others.

II. HISTORY OF THE TERM APPEARANCE

The term, as well as idea, has appeared long before the TV. Still in 1880 the message slipped that Alexander Bell invents “photophon” which the press has characterized as “ visual telegraph”.

In 1899 Russian military engineer and scientist K.D. Perskiy has submitted the paper “ The Modern condition of a question on electrovision on distance (televising) “ to the First All-Russia Electrotechnical congress in Saint-Petersburg [1].

Then K.D. Perskiy presented the same paper on August, 24th, 1900 in Paris on IV International Electrotechnical Congress being held in the context of the World Industrial Exhibition, devoted change of centuries where for the first time he has applied the term “Television”[2] which since then began be used widely abroad, and on Perskeiy's native land the term for many years did not find wide application.

Congress proceedings publication in French [3] gave an occasion to some foreign historians to affirm, that the author of this term was a certain “ frenchman Perski “. However K.D. Perskiy was Russian [4].

Vice-chairman of the congress M. A.Shatelen wrote in “ Electricity” magazine in 1900: “From Russkies read reports only two: captain Perskiy - “ About vision on distance “ and professor Popov – “ About application of phone as the reception device at telegraphy without wires “.

Russian engineer Konstantin Perskiy has taken the patent for the first mode in the world of the image transfer for distance in December, 1899 and, speaking in Paris, he told about television devices projects and an opportunity of their realization. At the Paris exhibition the optical device developed by K. Perskiy has been awarded a silver medal.

In 20th years of the last century TV suggested to name “vitaphon”, “dalnovidenie”, when demonstrating films on TV – “film-radio”, “radiocinema”, but the word “Television” or its direct translation began to appear in the majority of languages (“Fernsehen” in German, “Durdarshan” in Hindi, etc.).

So, the term “Television” for the first time sounded in French 110 years ago by K.D. Perskiy in Paris, was extended over the whole world. Until, if someone wished to tell about the device, allowing to see an event in other place, he spoke “foresight” or “electric telescopya”.

The mankind, still that not suspecting, has entered a new epoch - an epoch of Television.

Television (often abbreviated to TV, T.V., or more recently, tv; sometimes called telly, the tube, boob tube, or idiot box in British English) is a widely used telecommunication system for broadcasting and receiving moving pictures and sound over a distance. The term may also be used to refer specifically to a television set, programming or television transmission [5]. Etymologically the word is derived from mixed Latin and Greek roots, meaning "far

sight": Greek *tele*, far, and Latin *vision*, sight (from *video, vis*- to see, or to view in the first person).

Other English compounds formed from it include *telegraph* (18th c.), *telegram* (19th c.), *telepathy* (19th c.), *telephone* (19th c.), *telescope* (17th c.) (a word of Italian origin), and *telex* (20th c.) (a blend of *teleprinter* and *exchange*).

Thus, "Television" itself was coined in French by K.D. Perskiy, and was borrowed into English in 1907. Of its abbreviations, *telly* dates from about 1940, *TV* from 1948.

If step over at once in some decades - in 90th years of the past century it is possible to tell, the term "Television" became more integrated - broadcasting.

III. WHO WAS K.D. PERSKIY

Until recently it was known a little about K.D. Perskiy. But interest to his person has increased in connection with century of this term introduction.

K.D. Persky was born in 1854 in the Tver province of Russia. He belonged to an ancient nobiliary family which founder has arrived to the Moscow prince Dmitry Donskoi from Persia (from here and a surname).

After leaving Mihailovskiy artillery school he participated in Russia-Turkish war 1877-1878 (battled in group under command of the successor of a throne, the future tsar Alexander III) and was awarded Sacred Anna's 4-th item order with an inscription "For bravery ".

Konstantin D. Perskiy the captain of Russian army was a Russian electrical engineer, known also as a teacher electrical engineers in Konstantinovskiy artillery school (St.-Petersburg).

In 1882 he has graduated from the Mihailovskiy artillery academy. During 1883 - 1886 studied in the Nikolaev academy of the General Staff. At the time, he was Professor of Electricity at the Artillery Academy of Saint Petersburg. His paper referred to the work of other Russian experimenters in the field, including P. Nipkow and P.I. Bachmetiev, who were attempting to use the photoelectric properties of selenium as the basis for their inventions.

The further duty he passed at the Cartridge factory for guns (St.-Petersburg) as a chief of repair shops, and then worked at the Pipe factory.

Konstantin Perskiy took a visible place in scientifically-public life of Saint-Petersburg: was a member of Russian Technical society and the Scientific secretary of the Electrotechnical society.

At the All-Russia Electrotechnical congress at the end 1899 he has read through the survey report under the name " The Modern condition of a question on electrovision on distance (televising)", and has repeated it later at the Electrotechnical institute.

In 1900 at session in Russian technical society K. Perskiy has highly assessed the project of color television system by A.A. Polumordvinov, having noted its practicability, and has included this project in the Paris report.

K.D. Perskiy's practical works basically concerned to creation and improvement of cannon devices. In 1893 he was awarded a bronze medal of Russian Technical society and a medal of the same advantage of the World's fair (Chicago) for a design "guarding preventor from attempts of secret penetration into a premise ".

Under his original offer (1892) the device was developed for checking quadrants divisions at their serial manufacturing. This device passed approbation in a tool department of a factory up to 1896, and for these years there was no case of the claim for quadrants replacement on this parameter. "The device of captain Perskiy" was shown at the World Paris exhibition of arms (1900) [6].

K.D. Perskiy showed the big interest to last novelties of military technics and wrote the article about guided aeronautic devices in 1894 [7].

And, at last, we especially underlined a greate creative activity of captain Perskiy at the First All-Russia Electrotechnical congress (1899) when he, except for already mentioned report, addressed to the same congress with the second report "The Life and Works of Yablochkov"[8].

In 1902 K.D. Perskiy was made in colonels. For years of military service he becomes still the gentleman of orders St. Vladimir 4-th item, St. Stanislav 2-nd and 3-rd item, St. Anna 2-nd and 3-rd item.

K.D. Perskiy's track record with records about numerous awards and increases is stored in archive of the Military-Historical museum of Artillery, Engineering armies and armies of Communication in St.-Petersburg.

On April, 5th, 1906 under the highest order "colonel K.D. Perskiy has been made in the general-majors with dismissal, for illness, from service, with a uniform and with pension " and has soon died on 55-th year of a life.

Unfortunately, it was not possible to find a portrait yet of this talented engineer who has presented the world such a popular word today as Television.

IV. COMMUNICATION OF TIMES

Continuing traditions of predecessor K.D. Perskiy, scientists of St. Petersburg took part in the European research programs (ACTS and IST) – in the projects connected with broadcasting development - Integrated Broadband Communications on Broadcast Networks (AC 101 IBCoBN); Home Access System for Video-based IP-Teleservices (HAS VIDEO); Information Society Technologies for Home (IST@HOME), devoted delivering video-based IST services into European HOMEs.

Results lead within 1996-2004 of R&D in these projects, received on a uniform technological platform - broadcast networks on cable TV system, reflect rapid development of

new information and communication technologies in sphere of broadcasting.

Broadcast TV is typically disseminated via radio transmissions on designated channels in the 54–890 megahertz frequency band. Signals are now often transmitted with stereo and/or surround sound in many countries. Until the 2000s broadcast TV programs were generally recorded and transmitted as an analog signal, but in recent years public and commercial broadcasters have been progressively introducing digital television broadcasting technology.

There is a natural merge of a cable television to the Internet. The global network in this case unites in itself functions of all information services: e-mail, an electronic press, radio, including private messages, and also TV with private programs between subscribers and a video information exchange.

V. DEVELOPMENT TV BROADCASTING - THE NEAREST DECADE

It is possible to assume, that in the near future the TV on broadcasting channels completely will supersede not only a usual way of telecasting, but also and the Internet in its modern kind.

IPTV - internet protocol TV is a perspective sphere of activity for the telecommunication and advertising companies.

Within ten years telecasting on a network becomes usual way of telesignals transmission, that more reminding the Internet with an opportunity of telecasts loading.

The nearest five years, in the author opinion, the majority of consumers will have access to TV channels by means of satellite antennas, a cable network and broadcasting telephone lines.

Also there will be new standards on broadcasting and access to practically unlimited quantity of channels and programs.

Earlier network innovations and achievements in the field of digital TV practically had no anything the general, however close interaction between two areas now is observed.

With introduction IPTV the control over a choice of a content for viewing will pass from broadcast companies to subscribers, with an opportunity of record the direct liked programs, interactive programs and other opportunities.

IPTV opportunities are very impressive and also various, combining TV- services and the Internet simultaneously.

From Cisco point of view, for example, the most part of video from the Internet on the TV-screen will be showed not by means of the TV sets connected to a network, or connection PC-TV, but by means of special set top boxes and game consoles.

The nearest 10 years perspectives:

- the usual linear TV becomes less important for a society and can attract a national audience only relaying live events.

- in large social networks video will develop in convenient time - with system of recommendations and an opportunity of viewing that interests your social group.

- audio and video will be used more widely for personal communication as text or images.

- hybrid broadcast and broadband devices and displays will become mainstream and most video screens will have some form of data connection.

- HDTV- high definition will become the new standard and progressive scanning will eventually replace interlaced display.

- basic access technology - a fibre-optic. Cable television operators will migrate to internet protocols and extend their fibre-optic networks to the premises (FTTH).

- broadband data access will become an essential utility, like water, gas and electricity, providing connections of 1Gbps or more in urban areas.

- wired and wireless data networks will replace dedicated wiring within the home for audio visual distribution, communication and automation.

- sales of physical data carriers will strongly be reduced, all will be downloaded from network storage in the cloud.

- digital rights management - DRM restrictions will be everywhere, but legal subscribers will not have problems. And for struggle against copying the automated systems finding piracy copies in a network will be used.

VI. CONCLUSION

K.D. Perskiy - one more Russian who has left a trace in history of world television, alongside with P.I. Bahmetev, A.A. Polumordvinov, B.L. Rozing, V.K. Zvorykin and a number of other known scientists, engineers and inventors. As a matter of fact they have opened a new direction of telecommunications development - broadcasting.

Now to surprise nobody with receiving of broadband access to the Internet and to local resources. One of the most popular became IP-TV. On the whole as it understand delivery of TV-channels and a videocontent on demand to the subscriber by means of an IP-network.

For TV-channels delivery on IP-networks use multicast distribution of the IP-traffic more and more. In comparison with the unicast-traffic multicast allows to optimize an occupied bandwidth essentially.

The future of television that we know it, most likely, will be not so long. It confirms violent growth of such services, as YouTube, Hulu and many others.

The next decade will see the continuing transformation of television, with video becoming more personal and democratic as new networks subvert and transcend the broadcast traditional model.

ACKNOWLEDGEMENT

The author wish to acknowledge the assistance and support of the HISTELCON Steering Committee.

REFERENCES

[1] K.D. Perskiy, “The Modern condition of a question on electrovision on distance (televising)”, *Works of the First All-Russia electrotechnical congress*. SPb., vol. II, pp. 346-362, 1901 (in Russian).

[2] Constantin Perskyi, “Television by means of electricity”, *from the International World Fair of 1900, International Congress of Electricity* (Paris, August 18-25, 1900), reported under the authority of Mr. E. Hospitalier, General Reporter, Gauthier-Villars, printer and publisher, Paris, 1901.

[3] C. Perskyi, “Television av moyen de l'electricite”, *Exposition UniverselleInternationale de 1900//Congr. Intern. Electricite*: *Annexes. P*: Gavthier- Villars. pp. 54-56, 1903.

[4] V.A. Urvalov, *Sketches of television history*, Moscow: Science, 1990 (in Russian).

[5] Glen R. Jones, *Jones Cable Television and Information Infrastructure Dictionary*, 4th Edition, Jones Interactive, Inc., 1994.

[6] K.D. Perskiy, “The Device of captain Perskiy for checking quadrants divisions at their serial manufacturing”, *Artillery Magazine,* 1899.no. 6. pp. 547-549, 1899 (in Russian).

[7] Captain Perskiy, “Guided aeronautic devices and their value on war ”, *The Scout*, no. 180, pp. 261-262; no.181, pp. 289-291; no. 182, pp. 304-306, 1894 (in Russian).

[8] K.D. Perskiy, “Life and proceedings of Yablochkin”, *Electricity*, no. 1/2, pp. 1-18, 1900 (in Russian).