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Television Broadcasting and Information Security: Analyzing Current Challenges and Future Prospects

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Abstract: Television is gradually losing its position, but all predictions about its elimination from the media market in the short term do not come true. This necessitates a new understanding of the contemporary television space in its conceptual and functional dimensions. The purpose of the article is to analyse the information and security challenges in the paradigm of modern television broadcasting. The tasks of the scientific research are focused on the problem of modern positioning of the information culture of television broadcasting: on the one hand, it is a traditional media format that is already clearly established in terms of information security; on the other hand, television is being updated with new formats, which requires appropriate up-to-date mechanisms for responding to new potential threats without a peak cluster. The research methodology is focused on general scientific methods: analysis, modelling, forecasting. The analytical methodological segment provides traditional systemic and comparative characteristics of information security of television broadcasting; innovative methods, such as content analysis and online monitoring, are designed to determine the specifics of television content in the paradigm of modern media culture. The results of the study show that the interpretation of information security in the television segment is ambiguous. It is necessary to formulate a set of guidelines of a practical, applied and theoretical, and mental nature that will regulate information content and prevent threats from television

broadcasting. The author proposes the principles of information and communication control that will form a control system in the television cluster but will not turn into censorship: improvement of the fundamental triad of information security (confidentiality, integrity, and availability) and the addition of additional elements - authenticity, reliability, relevance. Prospects for information security research in the television segment are the synergy of human and technological efforts to prevent illegal and harmful activity in the broadcasting process: preventing unauthorised actions, avoiding threatening interpretations, and denying inhumane manifestations. Consequently, television remains an active player in the modern paradigm of the information society, maintaining its status as a relevant broadcaster of content of various kinds. Information security is a set of measures that provide for control over all information and communication media segments, which forms both universal and specific principles of information influence directly on the television format.

Keywords: television, information society, information security, content, media space.

Introduction

Modern society is facing an unprecedented level of threats resulting from abnormal information and communication activity. The information space is saturated with various broadcasters that have a significant impact on individual and public consciousness. Under such conditions, the potential humanitarian threat associated with the broadcasting and imposition of harmful information content is growing. During the heyday of television, the information and communication system developed clear mechanisms for monitoring compliance with information culture and security in this segment.

However, the current state of development of information technology has transformed the potential of television, shaping it into more dynamic and flexible manifestations, following the example of Internet resources. This requires a conceptual rethinking and practical revision of security standards in the television space.

Research Problem

In the scientific discourse, the modern television space is interpreted rather ambiguously in a context without peak parameters, as all attention is focused on innovative formats that are relevant and in demand in society. However, such positioning of television broadcasting security is threatening, and the need for new algorithms for TV space security remains unresolved in the scientific and practical dimension.

The research problem is the uncertainty of theoretical principles and practical methods of control over the information content of television broadcasting. Technologically, television is on the verge of analogue and digital broadcasting. Television's capabilities in terms of efficiency, mobility, or dynamism are significantly inferior to new sources of information, such as Internet resources or social networks. Therefore, there is uncertainty about the parameters and means of controlling the information space. The security parameters that have been used in television for a long time are morally and organisationally outdated, while the new security parameters that are specific to the digital environment are impractical to use for classical broadcasting (in organisational and financial terms).

Research Focus

The focus of the study is to determine the status of television broadcasting in the modern information paradigm. Given the current level of influence on individual and collective

consciousness, television in the short term should form the prospects for further development: maintaining its status with a constant process of updating its potential or gradually moving into a cluster of traditional cultural elements with a significant decrease in audience coverage. Therefore, the issue of information security in the broadcasting system is actually awaiting the further vector of the TV cluster's strategic development.

Research Aim and Research Questions

The purpose of the research is to highlight the principles of information security in the context of both the traditional format of control over the media space and the innovative dimension of information culture. The objectives of the article are aimed at streamlining and harmonising the ideological, mental, practical, and technological guidelines of the modern information culture paradigm in the broadcasting cluster. The problem of security is acutely expressed in the need to comply with the key parameters of the information content of television broadcasting:

- confidentiality, which provides for strict adherence to the norms of freedom of speech and information culture;
- accessibility, which determines equal opportunities in the creation, distribution, and reception of television products;
- integrity, which actualises the positioning of the television broadcaster alongside other sources and media.

The research hypothesis suggests focusing on the current status of television and systematising the existing principles of information security. The result of information security compliance in the television space is associated with clear control of information content and avoidance of threats of direct and veiled manipulation of individual and public consciousness. At the same time, given the universality of information control parameters, it is necessary to be guided by synergistic principles that will allow unifying approaches to information security standards, regardless of the information resource. It is not profitable to use security protocols specific to digital resources for the TV space because of their high cost. In addition, the effectiveness of regulatory elements focused on the dynamism of digital content is very low when used in a stable television format. The way out of this contradictory situation is to combine traditional principles of information security with certain practical and technological tools of the security segment (automatic detection of negative content or violation of information culture, practical blocking of resources).

Literature Review

The scientific discourse is actively discussing information security in the rapidly growing media space of our time. Despite the active development of digital content, the television cluster retains its role in the public information space. Losing its audience in the context of the efficiency and richness of content, television is actualising qualitative indicators of information influence, namely:

- focus on an audience that is used to watching television content;
- increased focus on the concept of authenticity of information topics;
- strengthening the information flow with human (as opposed to technological) potential.

Information control has two key vectors: human dimension (negative impact on human consciousness and worldview) and technological (technological factors that destroy the principles of the information culture of broadcasting).

Information security is not guided solely by principles or tools for their observance. At the beginning of the twenty-first century, the information security paradigm is being actively formed,

developing universal control methods that are relevant to all media resources. In particular, the InfoSec educational manual (Ma et al., 2019) presents the theoretical and methodological aspects of this problem. Curricula and courses dedicated to information security in the TV space are also relevant today (Puspitasari, Andriyani & Gafur, 2023). There is also a need for changes in the monitoring of TV organisations (Kucher, 2021). Currently, information security systems for the television space allow threats to be classified according to various parameters: national, gender, age (Nicholson, Coventry & Briggs, 2019), and cultural characteristics.

Information security standards have both a national (Song, Zhang & Pan, 2021) and international format (Malashko, 2017) and a global benchmark (Shchekachykhina & Popovych, 2022). State control of television broadcasting should be consistent with democratic principles of freedom of speech (Tiffen, 2022). It is noted that control over information flows has been established since the very beginning of television (Sümer & Tash, 2020). Public administration in the field of television and radio broadcasting is the best option for public control over the information product (Kalimbet & Sidor, 2021).

Research Methodology

General Background

The principles of information security in the television space require a synergy of traditional and innovative control algorithms. In the modern information space, the issue of security parameters is relevant, so the scientific discourse should provide effective models of compliance with their norms for various formats of information activity and for television in particular. The article offers a review type of article, which involves a qualitative study with an analysis of the scientific literature on information security in the television space.

Data Collection

Web of Science, Google Scholar, and ResearchGate were used to select the literature. The key words used to search the literature were the concepts of broadcasting and information security. Since the study is based on the analysis of the dynamics of information security in the television space, the research works of the last 3-5 years are relevant for the study.

Data Analyses

The methodology used in the study is based mainly on general scientific analytical methods. The analysis of the conceptual and functional parameters of television broadcasting helps to identify information threats. Comparative analysis allows us to determine the difference between traditional and innovative telecommunication systems in the context of compliance with information security standards. The article also uses the content analysis method, which allows monitoring the information activity of television broadcasting online.

To develop an effective information security strategy in the TV cluster, it is advisable to use the forecasting method. By identifying security priorities and mechanisms for ensuring them in the TV space, a short-term and long-term perspective for the development of television in general is formed. Structuring television activity at all levels of involvement involves modelling the broadcasting programme grid and the specifics of information content, which facilitates control over these TV elements.

An important methodological approach to achieving information security is the correlation of security principles in the tele- and digital space. Harmonisation of control principles is relevant in ensuring compliance with the classical triad of information security: availability, integrity, and

confidentiality. The synergy of security potential should be realised using interdisciplinary methodological approaches that will allow for the involvement of all participants and all elements of television activity.

Results

Television broadcasting in the modern information space has faced the problem of uncertainty of information security parameters. Innovative technologies have changed the media space, which has led to the transformation of information culture in general. New sources and broadcasters of content have dramatically increased the scale and intensity of information flows, which has automatically raised the issue of security in various ways:

- safe use of the broadcasting technology;
- avoiding any harmful impact on the content and format of information;
- defining the scope of potential influence on individual and public consciousness.

One of the main threats of today is the distortion of information (Rúas-Araújo, Rodríguez-Martelo & Máiz-Bar, 2022). It is clear that unreliable information automatically multiplies the negative consequences of this process. Television in the twentieth century was often considered an official source of information, which required increased control over the information broadcast on TV. The modern Internet and digital space have significantly reduced the level of control over the information product. Electronic media are revolutionising (Sura & Mishra, 2022) the way audiences engage with socially significant events, similar to the way television once did, by providing information to people who could not read and did not have the proper level of literacy. Such dramatic changes in the scale of the audience and the intensity of the information materials are fertile ground for various manipulations with the information broadcast.

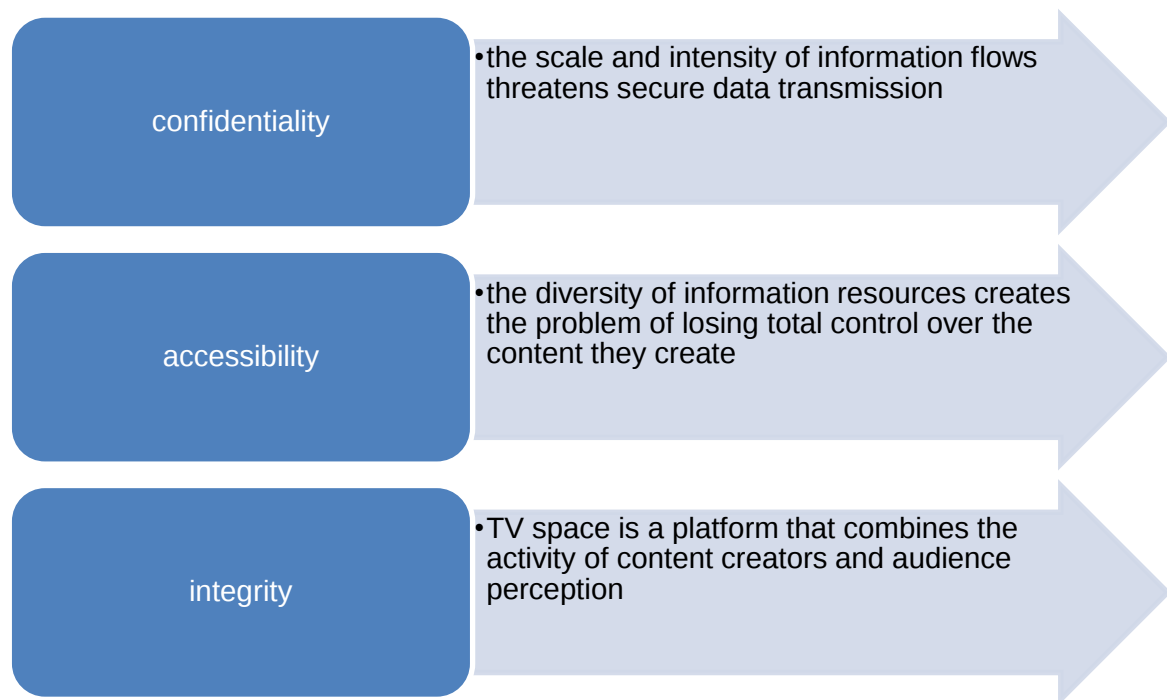
Television has received a significant boost during the Covid-19 pandemic. In the usual course of social life, people were focused on the efficiency and dynamism of online resources. When the pandemic restrictions effectively isolated people at home, the need for TV broadcasts increased (Hermes & Hill, 2020). At the same time, the responsibility of TV content creators has also increased, especially in topical issues of a socio-medical nature or the clarity of official information.

Television in the 21st century has faced a dilemma: to continue broadcasting with a high level of content filtering (with a clear understanding of the loss of viewer interest) or to reduce the requirements for internal review of broadcast materials (joining the “hot news” trends inherent in the digital media space).

Television, which operated according to the organisational and technological principles of the twentieth century, fully controlled the negative manifestations of the information space. However, the digitalisation of television and the new public perception of television broadcasting in the context of socio-cultural transformations have pointed to difficulties in complying with the fundamental principles of information security (see Figure 1).

Figure 1

Risks of Key Principles of Information Security in Television Broadcasting in the Early Twenty-first Century



Source: author's own development.

Accessibility is a special feature of information security, as it has a two-way interconnected dimension between the creators of television products and their consumers. Kamatchy & Dhanalakshmi (2020), based on an in-depth analysis of CNN to classify television content, conclude that product diversity helps to avoid information threats in the form of manipulation, fakes, and inaccurate data.

A special role in maintaining the integrity of information security was assigned to state control bodies (Tang et al., 2021). The structure of television or radio broadcasting allowed controlling bodies to physically carry out their functions (even at the global international level (Chernobrov & Briant, 2022)). State structures, when politically necessary, were able to censor television quite quickly and effectively (Gallet, 2022). However, with the transition of information resources to the virtual web, control has become much more difficult.

Although cyber security is developing rapidly, it cannot even come close to the level of control over information flows. These realities have led to a global shift of the audience to free-to-use information resources. This poses a real danger of losing the confidentiality of information in the television space (Ranaweera, Jurcut & Liyanage, 2021).

Twenty-first-century television has been left without its main twentieth-century asset - the audience. Along with the traditional controlling factors of information security compliance, new elements of this activity can be traced. In particular, a recommendation format for adherence to the principles of information culture by viewers is proposed (Alam & Khusro, 2020). This can stop the outflow of the audience and return it to television viewing. Broadcasting management, guided by the recommended principles of its activities, minimises the impact of negative factors in the provision of information (Kustiawan et al., 2022).

In such circumstances, in order to maintain the status of an active player in the information space, television is actualising other factors that can retain the audience. These factors have both a traditional fundamental nature and an innovative dimension.

Realising that the television format is not capable of surpassing the virtual space technologically, the emphasis was placed on the human factor to be competitive. The creators of television content and viewers (in fact, consumers of the product) have become the key potential of television. Therefore, the problem of information security is becoming more and more focused on the human factor. Security has become human in nature, both literally and figuratively.

Contemporary television is guided by the principles of creativity, placing its hopes not on technological sophistication (while actively using it), but on human capital. Therefore, information control also mainly concerns human activity in creating and broadcasting content. Security applies not only to information but also to the actors in the information space, which brings human security parameters into focus (for example, the safety of journalists (Crete-Nishihata et al., 2020)).

The development of television in the context of rapid socio-cultural progress contributes to the formation of new principles of information security that complement the existing ones and allow responding to threats and challenges of the times. New elements of information security in the TV segment are associated with the legal (Shtefan, 2023), economic (Petroye et al., 2020), socio-cultural (Wen, Wu & Yang, 2022), and technological (Asakura et al., 2023) dimensions (see Fig. 2) of modern civilisational progress.

Figure 2

New Elements of Information Security in the Television Space in the Age of Information Society



Source: author's own development.

Personal identification (Kim & Park, 2022) is a prospect for the formation of such a principle of information security as authenticity. The modern socio-cultural space pays considerable attention to the legal culture, in which copyright and the right to freedom of speech and expression are fundamental. Under such conditions, authenticity in the information dimension becomes a guarantee of security.

The individual dimension of information security has so far been an underestimated potential. However, recent years have shown that democratic societies that grant more rights and freedoms to individuals are responding by strengthening control over compliance with security principles in the television space. The creator of TV content and the viewer are mutually interested in maintaining information hygiene, which actually makes violations in this area impossible.

Information culture is determined by the level of quality and safety of the content broadcast on television. Official information, the public cluster (Honig, 2019), entertainment content (Melykh & Korbut, 2020), journalistic or fictional works - all of these form an impact on the viewer's mind. The

worldview and mental state of the population that consumes TV products in large numbers depends on how safe this content is. An important factor in adherence to information culture is the everyday experience of using INTERNET resources and the ability to compare it (Alam, Khusro & Khan, 2021) with television viewing.

Improvements in the technological characteristics of television broadcasting have increased the requirements for security parameters. The television format is constantly evolving, adding digital elements: AR-TV (Popovici & Vatavu, 2019), VR-TV. Innovative TV formats, such as Smart TV or Internet Protocol TV (IPTV) (Seo, Lee & Kim, 2020), use communication channels that are more vulnerable to external interference (Bachy et al., 2019). This means that the physical security measures that are common for analogue television are no longer relevant. At the same time, the television cluster needs new staffing solutions that will deal with security issues in addition to technological support.

Technology itself is also gaining a new understanding of security issues. Control is implemented at various levels: from innovative software (Zhang, Yu & Yu, 2007) to the coordination of satellite operations (Manulis et al., 2021) or signal availability (Igbonoba & Bankole, 2023). By adding digital technologies to the television system, security threats are automatically added. For example, the high-definition multimedia interface (HDMI), without which it is difficult to imagine a "high-quality picture" of the TV screen, is quite vulnerable to external attacks (Rondon et al., 2019), which forms an important element of the threat.

Discussion

An urgent problem of modern television broadcasting, which causes a number of discussions in the scientific space, is the issue of information and security challenges. The results obtained show that the content and format of information threats that potentially or directly affect television content violate the principles of confidentiality, accessibility, and integrity.

It was expected for scientific research to understand that security issues often intersect with the format of information content. New digital media technologies shape the design (Jiang, Wang & Tsai, 2022) of a television product by masking or modifying the content. Under such conditions, there is an unlimited scope for violations of information security parameters in all respects. A beautiful, vivid picture arouses the viewer's interest while weakening the ability to critically analyse the information presented.

The expected problem for the results of the study was the statement that information security is facing an urgent dichotomy: modern design (which carries many risks) or restrictions without a peak character that will affect the diversity and format of the television product. The answer to this debate is obvious since the rejection of new functional or design solutions will finally push television to an outsider position in the race for information resources of our time.

The results of the study showed that Internet technologies have become not just an alternative to traditional television broadcasting, but have partially captured this segment with their own products, which is confirmed in works that note the offer of a wide range of innovative television format products: home cinema (Allifah & Zualkernan, 2022), Smart TV (Lee, Park & Choi, 2012), TV apps, etc. The current study correlates with the popular belief that such processes are causing a reorientation of security parameters from traditional TV-oriented to digital norms. Such realities cannot contribute to the development of television in general, as the television cluster will not be able to withstand such a security burden either organisationally, structurally or financially, and logistically.

These results contradict the work of Çelik (2020), who actualises another vector aimed at achieving an appropriate level of information security in the TV space due to the role of a person (or social structure) in the creation and broadcasting of media content. For many countries (mainly developing ones - the conventional states of the Global South), the policy of a strong man, which is opposed to the power of technology, is relevant. In this positioning, a person is assigned the main role in complying with the principles of information security. The results of the study criticise this position, as it poses a threat of increased administrative pressure on freedom of speech and information culture. It is noted that such an approach is somewhat discordant with the desire of Western society to give control of information culture to automated technological solutions. On the one hand, security automation increases the ability to control large-scale volumes of information that are circulating in the media space. However, if we consider the television segment separately, such automation is virtually impossible due to the large share of human activity in the creation of a television product.

One of the manifestations of innovation in the study is the development of the concept of a new television structure - the formation of television communities (for example, Netflix (Arat & Şimşe, 2021) or Amazon Fire TV (Moghaddam et al., 2019), which clearly define the parameters of information security. It is clear that in the social dimension, it is much more effective to shape the parameters of information culture. When viewers are united by common interests, it is much easier to actualise the principles of accessibility and integrity that form information culture.

The study confirms the role of civil society in controlling information security and the idea of developing public service broadcasting, which is a manifestation of collective information security (Tomaselli, 2022). For example, one of the manifestations of the growing public influence on television in the twenty-first century is the development of awareness of an event, process, or phenomenon through broadcasting, which is evidence of the synergy between television and its audience (Umamiah & Menati, 2019).

The scientific novelty of the results lies in the innovative understanding of information security, which is a consequence of conflicts of values (Jaskuła, 2022). On the one hand, the audience strives for freedom, looking for more open information resources. On the other hand, the unlimited and uncontrolled information space can have negative and destructive consequences. Therefore, television is a kind of platform for reconciling freedom of speech and control over it.

The results of the study should be taken into account when stating the inevitability of digital and technological progress in television broadcasting, as well as the inevitable level of growth of threats to information security. Such a scale and intensity of factors that disrupt the balance of information security in the TV space can be controlled not by a ban (since this process will be the end of the television era), but by qualitatively strengthening the principles of information culture in general.

It is worth noting that not all aspects of security were considered in the current study due to the limitations that are shaped by the specifics of television traffic (especially in digital format) and the inability to trace its potential negative impact on the audience, given the delayed nature of its impact on individual and collective consciousness.

Conclusions and Implications

Thus, television of the 21st century, having passed all the tests of time, remains a competitive player in the media environment. The improvement of traditional television elements and the addition of technological and digital components have formed a new paradigm of the TV space. At

the same time, the issues of information culture in general and information security in particular have become more relevant. Classical television of the twentieth century strictly adhered to the fundamental principles of information security. New formats of television broadcasting have only strengthened (both functionally and conceptually) the security dimensions of information content. The traditional triad of information security (confidentiality, availability, and integrity) has been supplemented by elements that correspond to innovative transformations in the socio-cultural space, namely reliability, authenticity, and conceptuality.

The issue of information security in the television segment has two key aspects: technological and human. Technological tools and control algorithms meet the parameters of digital security. However, the human factor plays a dominant role in compliance with the security standards in the information television space. When television broadcasters have the opportunity to self-identify and express themselves in the information space, this forms the basis for a free democratic environment in which the causes of misconduct disappear. At the same time, the self-sufficiency and self-organisation of the creators and consumers of information products requires close monitoring of compliance with security standards and information culture in general.

Suggestions for Future Research

The prospects for further research into the problem of information security in the television broadcasting segment include several aspects:

- conceptual definition of television and comparison of its security potential with virtual digital media resources;
- interdependence in information security issues between traditional broadcasting and the INTERNET environment;
- the role of the human factor in compliance with information security standards and parameters when creating and consuming content;
- state and public control over compliance with the appropriate level of security in the television segment.

With the expansion of the television cluster in the twenty-first century, there is an urgent need to expand the principles of information security (the standard triad of integrity, confidentiality, and availability). To the purely organisational and technological tools and control algorithms, it is necessary to add the guidelines of information culture, which are characterised by a worldview and mental understanding of the security of information resources (reliability, conceptuality, and authenticity). New dimensions of information security correlate with socio-cultural transformations and are consistent with the legal, socio-economic, and cultural parameters of information society security.

The synergy of human potential (the desire and ability to comply with information culture) and technological arsenal (digital algorithms for compliance with security parameters) can preserve the fundamental principles of television development and strengthen information security in this cluster of media resources.

Preventing misinformation, fakes, unverified, or disinformation are key tasks of the conceptual security vector. Maintaining the format of television devices and communication channels is a functional cluster of TV environment security. Ultimately, avoiding manipulation and negative influence on individual and public consciousness is the task of the human dimension of security activity on television.

References

- Alam, I., & Khusro, S. (2020). Tailoring Recommendations to Groups of Viewers on Smart TV: A Real-Time Profile Generation Approach. *IEEE Access*, 8, 50814–50827. <https://doi.org/10.1109/ACCESS.2020.2980206>
- Alam, I., Khusro, S., & Khan, H. (2021). Personalized content recommendations on smart TV: Challenges, opportunities, and future research directions. *Entertainment Computing*, 38, 100418. <https://doi.org/10.1016/j.entcom.2021.100418>
- Allifah, N. M., & Zualkernan, I. A. (2022). Ranking Security of IoT-Based Smart Home Consumer Devices. *IEEE Access*, 10, 18352–18369. <https://doi.org/10.1109/ACCESS.2022.3148140>
- Arat, T., & Şimşe, S. (2021). Development of Internet Television Broadcasting and Satisfaction in Internet Broadcasting. *AVANCA | CINEMA*, 758–763. <https://doi.org/10.37390/avancacinema.2020.a187>
- Asakura, S., Nagata, H., Kabutomori, R., Onishi, M., Kambara, K., Otsuki, K., & Tsuchida, K. (2023). End-to-end Verification of the Advanced Broadcasting System. *ITE Transactions on Media Technology and Applications*, 11, 113–122. <https://doi.org/10.3169/mta.11.113>
- Bachy, Y., Nicomette, V., Kaâniche, M., & Alata, E. (2019). Smart-TV security: risk analysis and experiments on Smart-TV communication channels. *Journal of Computer Virology and Hacking Techniques*, 15, 61–76. <https://doi.org/10.1007/s11416-018-0320-3>
- Çelik, B. (2020). Screening for Erdoğanism: Television, post-truth, and political fear. *European Journal of Communication*, 35(4), 339–354. <https://doi.org/10.1177/0267323120903680>
- Chernobrov, D., & Briant, E. L. (2022). Competing propagandas: How the United States and Russia represent mutual propaganda activities. *Politics*, 42(3), 393–409. <https://doi.org/10.1177/0263395720966171>
- Crete-Nishihata, M., Oliver, J., Parsons, C., Walker, D., Tsui, L., & Deibert, R. (2020). The Information Security Cultures of Journalism. *Digital Journalism*, 8(8), 1068–1091. <https://doi.org/10.1080/21670811.2020.1777882>
- Gallet, É. (2022). "This is not censorship": The BBC and the Broadcasting Ban (1988-1994). *Mémoire(s), identité(s), marginalité(s) dans le monde occidental contemporain*, 27. <https://doi.org/10.4000/mimmoc.10215>
- Hermes, J., & Hill, A. (2020). Television's undoing of social distancing. *European Journal of Cultural Studies*, 23(4), 655–661. <https://doi.org/10.1177/1367549420927724>
- Honig, J. (2019). Public Policies on Broadcast and the Fairness Doctrine: History, Effects, and Implications for the Future. *Public Policy and Administration Review*, 7(1), 1–6. <https://doi.org/10.15640/ppar.v7n1a1>
- Igbonoba, E., & Bankole, A. (2023). Investigative Assessment of the Impact of Perturbations on the Digital Terrestrial Television Broadcasting Signal. *KIU Journal of Science, Engineering and Technology*, 2, 75–83. <https://doi.org/10.59568/KJSET-2023-2-1-10>
- Jaskuła, L. (2022). Conflict of Values in the Licensing Procedure for Broadcasting Radio and Television Programmes in Poland. *Teka Komisji Prawniczej PAN Oddział w Lublinie*, 15, 165–181. <https://doi.org/10.32084/tkp.4884>

- Jiang, R., Wang, L., & Tsai, S.-B. (2022). An Empirical Study on Digital Media Technology in Film and Television Animation Design. *Mathematical Problems in Engineering*, 5905117. <https://doi.org/10.1155/2022/5905117>
- Kalimbet, A., & Sidor, M. (2021). Normative and individual acts as tools of public administration activity in the field of television and radio broadcasting. *National Technical University of Ukraine Journal. Political science. Sociology. Law*, 3(47), 65-70. [https://doi.org/10.20535/2308-5053.2020.3\(47\).229420](https://doi.org/10.20535/2308-5053.2020.3(47).229420)
- Kamatchy, B., & Dhanalakshmi, P. (2020). A Deep Learning CNN Model for TV Broadcast Audio Classification. *International Journal of Engineering Research & Technology (IJERT)*, 9(11), 365-368. Retrieved from: https://d1wqtxts1xzle7.cloudfront.net/65161778/a_deep_learning_cnn_model_for_tv_broadcast_audio_classification_IJERTV9IS110145-libre.pdf?1607765962
- Kim, J., & Park, N. (2022). Lightweight knowledge-based authentication model for intelligent closed circuit television in mobile personal computing. *Personal and Ubiquitous Computing*, 26, 345-353. <https://doi.org/10.1007/s00779-019-01299-w>
- Kucher, S.. (2021). Legal Regulation of Spreading Opinions and Beliefs through TV Broadcasting. *Law and Safety*. 81, 154-159. <https://doi.org/10.32631/pb.2021.2.21>
- Kustiawan, W., Syakilah, N., Salsabila, T., Hasan, A., & Sitorus, A. (2022). Manajemen penyiaran serta pengembangan radio dan televisi: radio and television development broadcasting management. *Jurnal Ilmiah Teknik Informatika dan Komunikasi*, 2, 37-42. <https://doi.org/10.55606/juitik.v2i2.178>
- Lee, S.-H., Park, N.-S., & Choi, J.-Y. (2012). Secure communication in IPTV broadcasting. *The Journal of Supercomputing - TJS*, 62. <https://doi.org/10.1007/s11227-011-0582-8>
- Ma, S., Zhang, S., Li, G., & Wu, Y. (2019). Exploring information security education on social media use: Perspective of uses and gratifications theory. *Aslib Journal of Information Management*, 71(5), 618-636. <https://doi.org/10.1108/AJIM-09-2018-0213>
- Malashko, O. (2017). Policy and system for ensuring information security in the countries of central Europe. *International scientific journal "Internauka". Series: "Legal Sciences"*, 9. <https://doi.org/10.25313/2520-2308-2020-9-6304>
- Manulis, M., Bridges, C.P., Harrison, R., Sekar, V., & Davis, A. (2021). Cyber security in New Space. *International Journal of Information Security*, 20, 287-311. <https://doi.org/10.1007/s10207-020-00503-w>
- Melykh, O., & Korbut, A. (2020). Entertainment media in the context of hybrid war in the post-Soviet countries: the case of Ukraine. *Economic Annals-XXI*, 182(3-4). 25-33. <https://doi.org/10.21003/EA.V182-10>
- Moghaddam, H., Acar, G., Burgess, B., Mathur, A., Yuxing Huang, D., Feamster, N., Felten, E., Mittal, P., & Narayanan, A. (2019). Watching You Watch: The Tracking Ecosystem of Over-the-Top TV Streaming Devices. In *Proceedings of the 2019 ACM SIGSAC Conference on Computer and Communications Security* (pp. 131-147). Association for Computing Machinery, New York, NY, USA. <https://doi.org/10.1145/3319535.3354198>
- Nicholson, J., Coventry, L., & Briggs, P. (2019). "If It's Important It Will Be A Headline": Cybersecurity Information Seeking in Older Adults. In *Proceedings of the 2019 CHI Conference on Human*

Factors in Computing Systems (pp. 1-11). Association for Computing Machinery, New York, NY, USA. <https://doi.org/10.1145/3290605.3300579>

- Petroye, O., Lyulyov, O., Lytvynchuk, I., Paida, Y., & Pakhomov, V. (2020). Effects of information security and innovations on country's image: Governance aspect. *International Journal of Safety and Security Engineering*, 10(4), 459-466. <https://doi.org/10.18280/ijssse.100404>
- Popovici, I., & Vatavu, R. -D. (2019). Understanding Users' Preferences for Augmented Reality Television. In *IEEE International Symposium on Mixed and Augmented Reality* (pp. 269-278). Beijing, China. <https://doi.org/10.1109/ISMAR.2019.00024>
- Puspitasari, S., Andriyani, D., & Gafur, A. (2023). Development of Practical Learning Guides for Television Broadcasting Management Course. *Jurnal Penelitian Pendidikan IPA*, 9, 5131-5139. <https://doi.org/10.29303/jppipa.v9i7.3910>
- Ranaweera, P., Jurcut, A. D., & Liyanage, M. (2021). Survey on Multi-Access Edge Computing Security and Privacy. *IEEE Communications Surveys & Tutorials*, 23(2), 1078-1124. <https://doi.org/10.1109/COMST.2021.3062546>
- Rondon, L. P., Babun, L., Akkaya, K., & Selcuk Uluagac, A. (2019). HDMI-walk: attacking HDMI distribution networks via consumer electronic control protocol. In *Proceedings of the 35th Annual Computer Security Applications Conference* (pp. 650-659). Association for Computing Machinery, New York, NY, USA. <https://doi.org/10.1145/3359789.3359841>
- Rúas-Araújo, J., Rodríguez-Martelo, T., & Máiz-Bar, C. (2022). Verification Systems and Programs in Regional Television Stations That Are Members of the CIRCOM Network. *Journalism and Media*, 3(1), 1-12. <https://doi.org/10.3390/journalmedia3010001>
- Seo, Y.-D., Lee, E., & Kim, Y.-G. (2020). Video on demand recommender system for internet protocol television service based on explicit information fusion. *Expert Systems with Applications*, 143, 113045. <https://doi.org/10.1016/j.eswa.2019.113045>
- Shchekachykhina, K., & Popovych, P. (2022). Application of Network Technologies in Low-Budget Television Production. *Microsystems, Electronics and Acoustics*, 27, <https://doi.org/10.20535/2523-4455.mea.268974>
- Shtefan, A. (2023). Object of Related Rights of Broadcasting Organizations. *Problems of legality*, 160, 66-81. <https://doi.org/10.21564/2414-990X.160.273549>
- Song, J., Zhang, C., & Pan, C. (2021). Digital Television/Terrestrial Multimedia Broadcasting (DTMB). In *Wiley Encyclopedia of Electrical and Electronics Engineering* (pp. 1-13). <https://doi.org/10.1002/047134608X.W8418>
- Sümer, B., & Taş, O. (2020). The Regulation of Television Content in Turkey: From State Monopoly to Commercial Broadcasting and Beyond. In *Television in Turkey, Local Production, Transnational Expansion and Political Aspirations* (pp. 27-46). https://doi.org/10.1007/978-3-030-46051-8_2
- Sura, A., & Mishra, A. (2022). Accountability in Electronic Media: An Analysis of Regulatory Mechanism with Reference to TV Reporting in India. *International Journal of Mechanical Engineering*, 7(4), 1755-1759. <https://doi.org/10.13140/RG.2.2.18097.66405>
- Tang, Z., Miller, A. S., Zhou, Z., & Warkentin, M. (2021). Does government social media promote users' information security behavior towards COVID-19 scams? Cultivation effects and

- protective motivations. *Government Information Quarterly*, 38(2), 101572.
<https://doi.org/10.1016/j.giq.2021.101572>
- Tian, J. (2016). A Framework of Information Security System for Radio and Television. In Conference: 2016 3rd International Conference on Information Science and Control Engineering (pp. 1193-1197). <https://doi.org/10.1109/ICISCE.2016.256>
- Tiffen, R. (2022). Transmission interrupted: Australia's international television broadcasting. *Australian Journal of International Affairs*, 77, 1-22.
<https://doi.org/10.1080/10357718.2022.2152427>
- Tomaselli, R. (2022). Public Service Broadcasting in the Age of Information Capitalism. *Communicare: Journal for Communication Studies in Africa*, 8, 27-37.
<https://doi.org/10.36615/jcsa.v8i2.2051>
- Umaimah, W., & Menati, F. (2019). Brand Awareness of Local Television 'I Channel Bandung' Through Local Culture in Program "Sampurasun Cepot". *Proceedings of the 1st Workshop on Multidisciplinary and Its Applications*. <https://doi.org/10.4108/eai.20-1-2018.228189>
- Wen, S.-J., Wu, H., & Yang, J.-H. (2022). Research on Voice-Driven Facial Expression Film and Television Animation Based on Compromised Node Detection in Wireless Sensor Networks. *Computational Intelligence and Neuroscience*, 8563818.
<https://doi.org/10.1155/2022/8563818>
- Zhang, R., Yu, D., & Yu, S. (2007). Security Strategy of Digital Television Middleware System. *Consumer Electronics. IEEE Transactions on*, 53, 969-973.
<https://doi.org/10.1109/TCE.2007.4341574>