

MANAGING SOCIAL NETWORKS AND NETWORKED STRUCTURES: DISCURSIVE FIELD MODELLING

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The online space as an integral part of a common socio-political space is a source of innovation, yet new threats. Social networks and online communities—characterized by unregulated discursive interaction of users—are becoming the platforms where destructive social practices emerge and develop. Social practices cause the accumulation of some online political capital that can be converted into offline political capital and lead to social action. To ensure country's readiness for global challenges, especially during crises and information warfare, we need to reconsider the existing approaches in the theory of management; to develop a complex research methodology for managing horizontal interactions in the online space and assessing the impact of these interactions on socio-political systems.

Scientific research regarding the formation and development of network aspects of the online space is premised on the theories by D. Bell, R. Bert, D. Grabber, M. Granovetter, R. Davis, R. Deibert, C. Cunningham, M. Castells, M. McLuhan, M. Newman, A. Porter, E. Toffler, H. White, J. Urry, O. Yarren, who describe various aspects of social networks and network communication. Social network analysis conceptualized as a separate area of the humanities in the works by S. Berkowitz, S. Wasserman, J. Kuklinski, M. Mizrashi, D. Noak, D. Watts, B. Wellman, K. Faust. From the perspective of natural sciences (L. Barabashi, N. Dam and R. Albert), online and offline social networks are considered scale-free and often visualized as a social graph. Methodological and practical potential of the theory of political networks in public administration is examined by L.V. Smorgunov, A.V. Soloviev, A.S. Akhremenko, A.A. Dyagterev, O.V. Mikhailov, O.V. Kharkhordin, B.C. Vakhstein. Linguistics views the online space and social network ecosystems as complex semiotic systems with characteristic communicative, grammatical, and lexicographic features (D. Crystal, R. Quirk, E. Zuckerman, J. Woodcock, M. Johnson).

A review of the literature reveals that most approaches are based on scientific hypothesizing. Yet considering a system from the inside with a focus on specific tasks does not help eliminate the systemic problem. A complex solution of the tasks that authorities face on social network and networked structure management requires the integration of theory and practice to develop the methods for a preventive response to threats, rather than eliminating their individual manifestations and reacting post factum.

System analysis requires that social networks and networked structure should be modeled as a complex non-linear multidimensional construct. An interdisciplinary approach that involves integral Data Science methods (network analysis, graph visualization, semantic analysis) and modern linguistic methods (text annotation, frequency analysis, sentiment analysis) allows us to visualize and analyze discursive field ecosystem, identify the trends that have yet to manifest as social action.

A novel way to analyze and manage social networks and networked structures is to model the discursive fields they generate as a complex multidimensional networked construct. System analysis considers interactions in discursive fields as feedback-based processes: the impulses sent by the users affect the dynamics of the whole system, just as the system determines the nature of user interaction—the element that determines decision-making processes and the probability of social action. The feedback mechanism in the network society causes the emergence of new social practices, technologies, as well as cognitive distortions not only among different user groups, but also within the network community as a system. The decisions and actions of users are the basis of this feedback and an impetus for the development of constructive and/or destructive social practices.

The advantages of discursive field modeling for managing social networks and networked structures are: the speed of anomalous discursive activity detection, with recurrence being the indicator of information confrontation; accuracy of results due to mathematical modeling; multidimensional and multifaceted interpretation (visualization of networks of messages, users, hashtags, frequent chunks and semantic cores of discourses); opinion leaders detection and assessment of the degree of their influence on the network (classification of users as Degree, In-Degree, or Out-Degree influencers); semantic roles identification (graph method, the theory of kernel structures and dependency grammar). The disadvantages of the method are the limitations in computing power and data processing time, which can be easily overcome.

The cases that prove robustness of discursive field modeling and consistency of the results are the authors' studies on deliberative interaction of parties and the electorate (the sample in March–July 2021 is 152,417 units; the web corpus of messages includes: “United Russia–Messages”, “KPRF–Messages”, “LDPR–Messages”, “A Just Russia–For Truth–Messages”); modeling of the socio-political agenda “Coronavirus” and “Constitution” (the “Official discourse” web corpus included the content retrieved from the official websites of RIA Novosti, TASS, Interfax at three control points and amounted to 10 thousand publications; the “Network Discourse” web corpus – 1.9 million messages and 760 thousand users data); US elections in 2016 and 2020 (the sample at two control points (March–October 2020) is 1.5 million messages); the appointment of Rishi Sunak as Prime Minister of the United Kingdom (25th October 2022 sample size – 500,000 messages), in which the copyright analytical software package *Monitoring and analysis of social networks, communities and users of the Internet space* was used (certificates of state registration of the computer program No. 2018665564; No. 2018663499; No. 2019666985; No. 2020667724; No. 2020667357).

Integrated Data Science methods make it possible to visualize large-scale discursive fields generated in the online space, interpret the essence of global processes that affect the stability of the socio-political system, and conduct prescriptive analytics regarding the management of social networks and networked structures operating in the online space.

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