Information and Information Technologies as Applied in Political Strategy Modeling

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Received February 12, 2016

Abstract—This paper analyzes modern information technologies as applied in the political environment and considers the content and peculiarities of using IT programs in strategic political modeling.

INTRODUCTION

Despite the formal development of participatory democracy in modern states, the need for escalated political transformations has become imminent, taking account of the intensifying development of the differentiated information society, which requires properly interactive and transparent public policy. Political strategic models are rationalized attempts to understand how it is possible to avoid common political disruptions, accelerate the development of the entire variety of the political structure of the state, and, most importantly, come to strategic social harmony, achieve a value consensus between the authorities and the public, and thus implement the national course of political, economic, and cultural modernization. In the current social environment the study of strategic modeling as an intellectual product is intended to analyze the significance of sociocultural, political, economic, and historical factors of the behavior of political subjects for the purpose of creating universal patterns of reproduction and positive transformation of the political information realm. As noted by Russian philosopher B.V. Markov, "*the plurality of information sources produces a paradox: on the one hand, democratic society faces the threat of entropy; on the other hand, even left democrats posit the need for a certain selectivity because the dominance of involvement over exclusion and accelerating communication flow do not leave any time for reflection*" [1, p. 448].

From the standpoint of social science, information acquires its significance in and through society. It generates social values when modified in the context of politics. We consider heuristics as the approach developed by the schools of thought of R.S. Gilyarevskii, E.P. Semenyuk, A.D. Ursul, and A.I. Chernyi, who view information as an ideal substance (meaning and interpretation of messages contained in material data) [2, p. 76].

This approach makes it possible not only to conceptualize multiple interpretations of political information but also link the study of phenomena in the domain of political information processes with the integral philosophical theory of information. The object of study and the subject matter of this theory are all kinds of social communication and structure and characteristics of semantic messages [3, p. 398].

We have to admit that at times this line of reasoning creates problems in political communication studies and makes it necessary to reconsider the fact that "*any imagined manifestations of sociality are immanently linked with information processes and information proper*" [4]. Moreover, the problematization of information as reflected diversity that is contained in one object of communication with regard to another [5, p. 228] requires more serious treatment of the philosophical definition of information as the core explanatory category. What does this mean for studies with political information as their common subject matter?

First, it is fruitful to use logic, as attempted in the disciplinary domain of informatics, to explain processes that are commonly defined as political.

Secondly, if we treat informatics as the science of *all* kinds of social communication, we will need some single "cognitive style".

Thirdly, this research task must be solved to develop concepts of and approaches to technologies of keeping public order. An essential factor of public order is adequate interaction between the complex organized society and the state. As T. Hobbs would put it aphoristically, these interactions are the nerves "*by which, fastened to the seat of sovereignty, every joint and member is moved to perform its duties*" [6, p. 6]. Ger-

man political expert K.W. Deutsch developed this metaphor to call political communication the "*excitatory system of public administration*" [7].

Informatization, which has affected almost all of the people on Earth, is attended by the development of new communicative structures and processes, profound changes in the social communicative environment and communicative nature of social reality, and reconsideration of the role of information in social development [8, p. 103]. To illustrate this intervention of information, V.A. Lektorskii has emphasized that *the new life phase of the society that is called the information or knowledge society not only creates new opportunities for human development but enormous new risks and means of brainwashing people and even turning them into posthumans, i.e., essentially subhumans* [9]. Thus, modern information technologies provide new opportunities as well and carry new threats.

This prompts the need for a new paradigm and methodology of studying political communication as an autonomous object of study because this communication "performs specific social functions and has its proper morphology, style of communication for macrosocial groups that is mediated multiple times, and other characteristics" [10, p. 5].

"THE VISION" OF INFORMATION IN THE POLITICAL ENVIRONMENT

Although the individual aspects of political communications have been the subject matter of many studies, there is still a definite lack of topical conceptual proposals that would make it possible to analyze all the aspects of the investigated phenomenon, its specifics and trends in the current conditions, at the empirical level as well. This is especially true for the role of global informatization. As noted above, we refer to the need for integrating the logic of political communications analysis in the methodology, taking into account that *this process is usually complicated by noise and interference that change communicated information. Thus, a subject almost never obtains information that serves in pure form as content for reflection. The content of reflection is always complicated and eclipsed by the definite diversity of inbound interferences. In relation to the content this diversity always acts as the source of entropy and uncertainty* [5, p. 200].

In the case of political communication interactions with the naturally inherent elements and characteristics of social communication we may refer to human factors that distort the perception of communicated messages. Negentropy or negative entropy refers to the case when, in spite of all of the distortions and missing information, an incomplete/distorted message is understood by the receiver due to his discerning ability. As noted by E. Fromm, *Man lives in a state of illusion and believes that he knows what he wants. In reality,* however, *he does not want things he should desire according to general wisdom* [11, p. 227].

If we investigate this assumption in more detail, we should suppose that, first of all, politics as a sequential exchange of information and opinions that connects all groups of individuals in a dynamic system in space and time requires certain modeled processes and programs. These are intended to become one and harmonize the existence of the social and the political systems as such. There is no doubt that model building depends on a number of value-related, epistemological, organizational, and social elements [12].

When Max Weber meditated on the essence of politics, he did not emphasize assertions on the acceptable structures, will, competence, sense of duty, and responsibility in the profession of a politician but rather *some subjective vision that makes it possible to focus on realities of the political environment* on the basis of remote analysis of relationships among people, institutions, and things [13]. This "vision*"* is observed in the selective consumption of social information by individuals according to their own inclinations, interests, social position and other factors; information proper appears to be the key tool in self-representation of politics. The symbolic essence of information exchange assumes paramount importance in relation to political communications because symbols embody in the text meanings that are significant in terms of authority and thus serve as the basis for identifying political objects in human perception. In the historical course of political development means of symbolization of messages have varied [10].

POLITICS, KINDS OF INFORMATION FLOW, AND STRATEGIC MODELS

One of the best known statements of J. Habermas is that politics expresses itself in a system of communicative actions that serve as a chain of mediations. Moreover, authority is hierarchical and forcible, whereas communication is egalitarian and influences by persuasion [14]. Having become exceptionally popular and turned to a universal explanatory model for most diverse information phenomena in the political process, this assertion sometimes produces an endless explanatory circle without due theoretical elaboration: politics is explained via information and communications, which also requires profound interpretation of their meaning and links with observed political processes. The political environment occurs right at the crossroads of polyvariant axes that cross the social, economic, and other systems and thus manifests itself as relative and susceptible to permanent transformations, with preservation of objective structures similar to Weber's ideal types. In this context it is hardly possible to represent information as a purely technical connective and essentially secondary element of the political process, whose significance does not depend

on the actor's goal and is reduced merely to the functions of structuring and support.

Changes to the statement of the conceptualization of information only as a technical element of the political process have occurred via the investigations of the Russian scientist A.D. Ursul: he addressed the problematic area of the value of information and caused a certain reversal of the political semantic situation. Needless to say, the study of information in the political process as a tool for realistic reconstruction of information practices from the value-related standpoint of creating and keeping public order has a significant heuristic value for political communication studies. We shall continue our speculations proceeding from the analytical tool and research principle suggested and formulated by Ursul: *as a general matter, the value of information is the relationship between a subject (a receiver of information), information, and a target. At the same time, information serves as an objective factor and a carrier of value. The latter results, therefore, from the interaction between the subjective and the objective factor. The value of information is determined not by the subject's feelings or viewpoint but by its connection with information and a target* [5, p. 55].

However, we can additionally specify this vision by addressing the methodologically significant discrimination by Habermas of such types of *cognitive interests* as technical (forecasting and administration), practical (interpretation and understanding), and emancipatory (critics and liberation). Information flows are aimed at meeting these interests [15, pp. 167−191]. It thus becomes possible to move closer to conceptualizing the phenomenon of strategic modeling in politics. It will therefore be possible to conclude that the term *modeling* refers most generally to studying a particular object or process by working on a model of this process or object, which is usually understood as an artifact that is very similar to the real prototype and has a high level of potential cognitive completeness.

Now, let us note the very important hierarchy of models expounded by Carl Hempel in his work *The Logic of Explanation* [16]. These models are intended to design processes with the best possible explicitness: first-type models are structural models that are intended to clarify the analysis of an object's properties, functions, and evaluations of performance results; second-type models are project models aimed rather at the dynamic evaluation of an object and forecasting changes in its specific features in time and space. Models of both types are capable of manifesting both their essences, cognitive and formal. When considering the political environment, strategic modeling is defined as the development and implementation of the most efficient models of exercising political authority aimed at meeting the needs of political actors, institutions, and people. Another important fact is that the adoption of strategic modeling in the

political environment is not a random semantic action.

The creation of political strategies, which essentially leads to the development of the most efficient methods for embodying political action, can be treated in equal measure as a kind of masterly art, philosophy of thought, and a purely theoretical form of knowledge, because the essence of these strategies either gravitates towards the domination of unique properties determined by transformative political realities or it is confined to the tight frame of sequential reproduction of the accumulated theoretical background, which ultimately forms the basis for reasonable and efficient strategies in the political environment.

We should note that the analytical model of strategies can be developed after avoiding the political reductionism that gravitates towards dissecting the environment in a number of simplified synthetic elements, because modernity unambiguously shows that it is not sufficient for an investogator to comply with formal logic and distinguish only certain characteristic dominants that reflect the functioning of reality. As noted by T. Saati, any system, political systems included, is an enormous network of formal and, far more importantly, informal and latent relationships [17, p. 46].

This assumption reveals a major problem in discerning universal characteristics or, to put it otherwise, conditions for any political strategy regardless of the context of its implementation, tactical methods and field of action that constitute this strategy as a formal and informal determinedness by certain aspects. The analysis of the development of political strategic-modeling theory shows that this paradigm of knowledge is integrated in the general complex of studies of the information phenomenon and cannot be considered separately from its analysis.

The Dutch researchers J. Bordewijk and B. van Kaam derived a four-term logical matrix of models of alternative kinds of information flow.

The first model is called the broadcasting (allocution) model: it is typical nonreversible communication, propagation of information from one person (center) to many others at the same time.

The second model is the dialog model of direct communication of individuals without a center and intermediaries. This model makes it possible to choose the time, place, and subject of political information exchange.

The third model is the consulting model, where an individual at the periphery of a communication sends selective requests for information to a large data-storage center.

The fourth model is the registration model, which is the opposite of the previous model. In this model the center asks for and receives information from a peripheral source, processes the data that is received, and forms a uniform narrative that is transmitted to the

individual. Moreover, the center has more control over information traffic than the individual at the periphery of the communication network [18].

CRITERIA OF INFORMATION APPLICABILITY IN THE ELABORATION OF POLITICAL STRATEGY MODELS

However, we have to admit that the models presented in [18] make it possible to view the formal process of using information in political strategy modeling rather as some trade and practical activity than consider its internal content and global goals. In the opinion of J. Scott [19] any strategic projects for rebuilding the state have eventually been completely unsuccessful. This thought may initially seem to be a paradox. Scott explains, however, that he refers not to totally failed strategic initiatives but to the fact that the final results diverge very far from their original plan, even when taking account of the serious sensible effort that has been invested in the implementation of the strategy.

It is exactly in this case where we face the need to use the "hybrid" phenomenon in the analysis. As opposed to classical deductive and epistemological knowledge, this phenomenon is the definite sum of fundamental historical, philosophical, and cultural aspects of human behavior, skills, and norms; only if these are all analyzed can a strategy that is imposed by the authorities be successful. According to J. Scott, all projects of political simplification and existential formalization necessarily lead to counter-hybrids; he shows us that any social and political environment has a profound internal basis. This basis is determined, first of all, by information as the meaning and interpretation of messages and, consequently, aspects of individual behavior. According to Scott, only if a person takes account of these prerequisites can he be an organic citizen under any statehood, adapt to its changing environment, analyze the enveloping society, evaluate his rivals, be an efficient administrator, and assume responsibility for administrative strategy results. By taking account of the hybrid phenomenon, governments can form information environments for social consideration, training, and criticism, which can help to cope with the tyranny of daily routine and stagnation of statehood.

M.N. Grachev expounded his position metaphorically: he called political communication the "source of vitality" or the "breast milk" of politics *because political communication is a necessary substance that binds together different parts of society and allows them to function as an organic whole* [20, p. 70].

Before directly analyzing the role of information in strategic political modeling, we should clarify another important issue.

We can assume with reasonable certainty that immediately after information had been conventionally recognized as a part of reflection that differs from matter and energy and is perceived by *material systems that are sufficiently structured for its storage, processing, and further use for administrative purposes, as well as being manifested in ordered data on the degree of probability of a particular event out of the potential diversity of events of some kind* [21], it became possible to develop a more or less adequate and efficient theoretical solution of the criteria for the applicability of information in the development of strategic political models, which is represented as follows:

(1) coherence is the ability of actors in the political environment to use internal communication lines between hierarchical structures, institutions, and sectors with success when preparing and making key decisions;

(2) competence is the level of rational evaluation and understanding of the social meaning of information, which is consistent with current political realities;

(3) legitimacy is the ability of actors in the political information environment to form an idea about the greatest acceptability of their proper activities in comparison with other players and about modification of political information in the social context by transaction of values and mindsets;

(4) efficiency is an instrumental evaluation indicator of the efficiency of decisions that are made on the basis of information and the implementation of results in the political environment [22].

This functional environment is exactly where it becomes possible to reformulate the issue of information relevance in the context of analyzing social instability.

We can hardly agree with the view of A.P. Chudinov, who believes that *the struggle for political power is the main function of political communications: political communications is intended to directly or indirectly influence the distribution (by way of elections, appointments, public opinion formation, etc.) and use of power (by adoption of laws, issuing of decrees and resolutions, etc.)* [23, p. 11]. We consider his arguments to be insufficient. In this case we deal with only one aspect out of the entire range of social functions of information in the political environment [24].

In addition, we need to consider the issue of what information helps us to adapt more rapidly to future conflicts more thoroughly and concentrate on the goals that have to do, first of all, with those areas in the environment where a political actor may make a faster strategic response than the rate of change; therefore, these changes may become more predictable and realistic to attain.

Finally, we need to identify "areas of disagreement", where information control, corruption, and hiding of information begin to occur. In this case, the correlativity of information may be drawn into question (incomplete and inaccurate facts, unwanted information disclosure, underestimation of facts and

their meaning, suspicion of premeditated hiding of information, misinformation, unreliable experts and sources or information or data, random interpretation of language that are used, etc.).

When we consider the means by which information affects efforts to overcome instability, we must use such techniques as the extrapolation of trends, prediction of changes, control by weak signals, selection of central strategic positions, and the grading of strategic tasks. It is thus evident that the role of information in the formation political strategy is confined to the maximum focus on opportunities, not on tasks. In the context of the political environment it is appropriate to pay particular attention to ideal projective structures, which are distinctive philosophical modeling structures based exactly on hybrid knowledge.

It is quite evident that the observance of formal procedures typical of the entire 20th century is becoming irrelevant in the modern political environment, which needs a new vector of development. Thus, the formulation of a global strategic goal is directly linked with in-depth penetration into the profundities of ideal target structures that may include the "vision" of so-called political actors, which determines the quality and significance of the selected information.

An extremely efficient procedure to attain the most accurate information filtering is the elaboration of a vision scheme that includes all of the characteristics of the current state of a political actor and predicted values and limits of the time continuum. Properly speaking, an acceptable solution can be found only by identifying general strategic patterns in the domain of political information. In this case we deal with the phenomenon of the *information norm*, as accurately described by R. Darendorf. She defined norms as representing certain kinds of resistance to an information flow that escape the domain of random probability and endow the information flow with elements of reliability, responsibility, and accuracy [25, p. 284].

Thus, these considerations show that information is the basic component in the administration of any political organization.

INFORMATION TECHNOLOGIES AND STRATEGIC POLITICAL ADMINISTRATION

There is currently no component of strategic modeling that can be considered separately from the analysis of information flows that penetrate each strategic decision and, all the more, actions. According to M.S. Vershinin, *new information and communication technologies are actively adopted in the political domain; not only have they brought substantial changes in past perceptions, attitudes, and stereotypes but they have also broken many forms of behavior and models of relationships between political institutions and individuals* [26, p. 253].

It has already been noted that one of the essential tasks of strategic modeling is to obtain and propagate timely factual information, both within the network and from the external part of the political environment. Without this information the integral process of political administration, which affects the mechanisms of cultural, social, even spiritual changes, can be treated merely as a subjective opinion.

In terms of strategic model building, information processes need ordering via the formation of a special corporate culture based on procedures for the treatment of information, i.e., information acquisition, intelligent information processing, and the use of information to carry out an entire strategic plan. Thus, a political organization will avoid previous mistakes or repeated invention of long-tested methods of administration (Fig. 1). It is an obvious fact that information processes are destructive in essence and become more and more manipulative.

While considering the strategic information model of administration in political institutions, one should focus on analysis of IT programs for computerized automation of political processes. The diagram of political administration areas where information technologies can be applied is given in Fig. 2.

By adopting information technologies information is retrieved from its abstract storage area, processed, and returned in a new form to political institutions; as a result, entire administrative discourses can be gradually modified.

This allows us to take the next step, i.e., to consider four types of computer programs that are thought to be efficient when applied to the strategic modeling of administrative political processes and to reduce advanced development risks [27]. In terms of functions these programs can be divided into programs intended to search for and make efficient decisions; resource-management service programs; programs to arrange internal structural operations of political institutions and encourage cross information exchange among different federal and regional bodies of public authority and their relationships with economic, research and engineering corporations; and specialized software for online use, as well as web resources that provide interactive political processes to raise the level of social activity, which plays a significant role in the evolution of the "network society" [28].

The first type of program, those that make up the structure of the strategic information model, is interpreted as a decision-support system (DSS). DSS programs provide a set of theme-based blocks to a political manager that are composed individually for each political organization. Each particular block is an area for potential decision making. These programs are efficiently integrated in ministerial activities and have a standard set of blocks: local intra-organization area (HR decisions, financial analytics, restructuring of subdivisions, anti-crisis arrangements, etc.), key
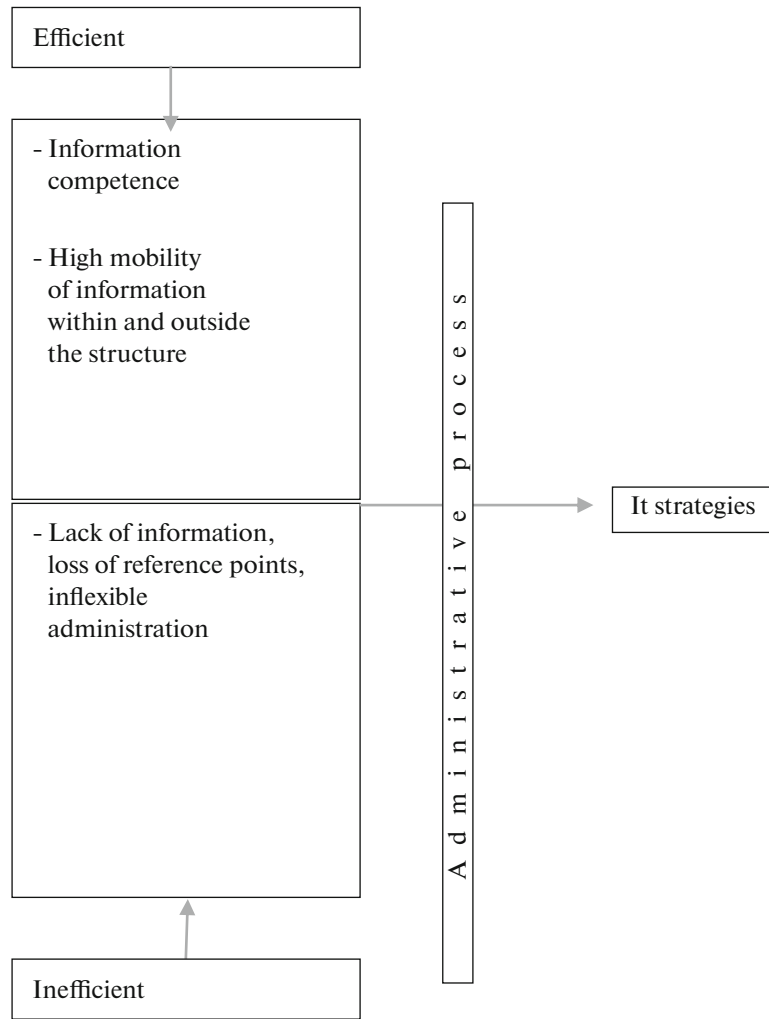
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Fig. 1. The influence of IT strategies on political administration.

large-scale projects, and the marketing and representational area of the activities of a political institution. All the blocks utilize different methods, whose range depends on the processing complexity of the program and, therefore, the direct cost of its development [29].

Let us consider the specifics of the basic methods used in DSS programs.

First of all, these include search tools. DSS programs must be developed in such a way as to contain as detailed information as possible to support the formal part of decision making. In this context we include a branch database of legislative decrees and the system of test cases, scientific and theoretical support of decision making, access to permanently updated global news blocks, etc.

Secondly, a significant role is played by mathematical forecasting of political processes, as well as methods for scenario or simulation modeling; this makes it possible to reject a huge number of variants that are

not adequate for particular cases without excessive test costs.

Finally, the most innovative and efficient measure is to use interactive consulting techniques in political decision making; this makes it possible to obtain advice by a broad range of highly skilled specialists within the shortest time possible, including scientists, political strategists, economists, lawyers, etc. from around the world. The list of these specialists is formed for every new DSS program in advance.

The second type of program that forms the strategic information model matrix is intended for resource accounting and distribution. These are referred to as resource management systems (RMSs); they have been in use for more than 20 years in the structural business units of most transnational corporations, especially in power engineering. However, this type of technology has been very little used in the area of political administration, which is extremely destructive. RMS programs can enable political institutions to
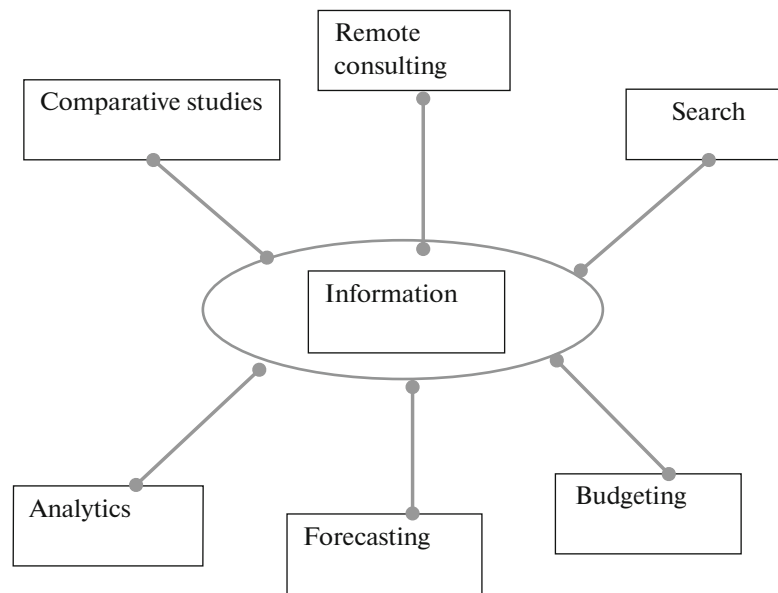
Fig. 2. A diagram of the analysis of information technologies as applied in political.

control resources on a continuous basis. The list of these resources is entered in the program as required by a customer. In the case of implementation in political organizations we consider it topical to make certain additions to standard RMSs, along with the mathematical evaluation of financial resources that are expended and received.

First of all, this is human-resource accounting via the formation of a database of the employees of a political institution with detailed personal records, including expertise, achievements, range of functions, work results, etc. This saves much time in strategic task grading, as well as in choosing a candidate who will be responsible for implementing particular political decisions.

Secondly, the area of political administration requires accounting for private corporate investments in state projects, which will make it possible over time to identify trends and reliable lines for cooperation.

Thirdly, modern information technologies make it possible to use powerful tools for the budgeting of innovative technologies; as a result, it becomes possible to work out a plan of the expected input of resources and continue to plan by modeling possible areas of their use. These areas will be proposed to the political top manager in the form of charts and diagrams by the RSS program itself, which carries out complex accounting of the resource potential of a political institution, as well as the fields for and efficiency of its application.

The third type of information program, which would be interesting to apply during the analysis of strategic modeling in a political administration, encourages development of integrative exchanges among the sub-structures of the political institution, as well as between the institution itself and the organizations with profiles that overlap the proper political activities of this institution.

In this context this means the interactions among ministries with similar profiles (culture and education, economy and finance, etc.), regions with economic, territorial, national, and other similarities, state and private corporations involved in a unified project, etc. We will conventionally call this type of program an information-sharing system (ISS). These are based on the creation of enormous data servers that are connected to a single system. Each server is a combination of dominants (information blocks) ordered according to size, which can be of strategic significance for partners. An ISS platform may contain variable databases that are open for exchange, analysis of adopted laws, and transmission of their gradual materialization as if it were online (i.e., in continued update mode) on different subjects and even states for the purpose of objective evaluation of reality and sharing experiences, as well as means of observation and control over the activities of partners in particular joint arrangements (for example, when a nationwide project is overseen by several ministries and the work of each largely determines the efficiency of the others, or when a government order is assigned by bids or in a different manner to private corporations for fulfillment). The ISS system is also effective when used in operation within political institutions, especially in major political organizations. It is not infrequent that bodies and departments find it difficult to find information about each other's operations; even documentary acts are sometimes documented only on paper, which makes the political process unstable and slows decision-mak-

ing procedures. It is thus quite obvious that specialized ISS programs can make political administration considerably more structured and move it from individual to system-based action.

The *fourth* and last type of program platforms is intended to ensure the publicity of the information strategic model and, therefore, a high level of its legitimacy [30].

Essentially, this context serves to consider traditional virtual programs for the political environment (as intended for use on governmental data servers or standard web resources of political organizations, which allows individuals to be involved in the decision-making process and get to know the structure of an organization of interest in detail). These programs are at the heart of a huge number of concepts based on the primary role of information in political processes. It is interesting to study the innovative trends in this area. This includes various programs that are installed on a personal computer that allow a user to continuously monitor any information in the political environment that he is interested in. As an example, these include programs that are intended to provide transparent consideration and adoption of laws (a Law Analysis System or LAS); programs intended for individuals who are members of a particular party who wish to be deeply involved in its work both in their home district and outside it, as well as get to know the latest trends and news (Party Member System or PMS); the programs that are intended to promptly deliver information on changes in the value of stocks of government corporations and to make forecasts based on measuring variations in their value (Stock Holder System or SHS), which makes political administration more transparent and stabilizes people's attitude to financial collaboration with the public sector.

CONCLUSIONS

The analyzed peculiarities of using information technologies in political administration clearly prove that there is no strategic model in which the rapid rate of transformations in the political environment can be fully taken into account; these models provide limited opportunities to obtain adequate and timely information. According to our estimation, however, a political analyst or manager must ideally have all of the possible data on a particular situation at his disposal. As shown by the in-depth consideration of aspects of strategic modeling in politics, the main problems of strategy development and implementation have to do rather with excessive information treated in a very perfunctory manner, which determines the subjective perception of strategic modeling in general. Finally, the most global property of intelligent innovations unfolds in the communicative field of political administration, where information resources are produced that require further storage, reformatting, and transmission to contiguous political environments in expectation of

feedback. As a result of this pattern, the analysis of the range of innovative information technologies as well as the search for modern links with public opinion becomes an inevitable part of strategic administration models. The adoption of the indicated technologies in model building is intended to harmonize political administration by combining its ethical aspect with efficiency rating increase.

It is therefore quite obvious that the timely implementation of innovative information and technological models harmonizes the strategic administration process by endowing it with consistency and rationality, optimizing the decision-making process, coordinating operations of non-overlapping sectors in political organizations, optimizing the use of the resource base, and developing interactive tools wanted for by all modern political systems.

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Translated by S. Kuznetsov