

*Oliver BAKRESKI***UDK: 342.5.072.3:355.45**  
Professional article**FORECASTING AS A PRECONDITION FOR PLANNING IN SECURITY*****Abstract:***

Forecasting is an integral part of the planning process and analogously without forecasting we cannot even attempt to understand all the complexity of today's world, the phenomena and processes that occur in it, the complexity of situations and systems if we do not face the need from their understanding and prediction. Analysing all aspects of forecasting is a very complex and difficult task, as it is characterized by great dynamism, complexity, and specificity. Therefore, the study of forecasting should primarily be based on its full understanding and differentiation from other security management functions to avoid any one-sidedness. Forecast within the framework of this paper primarily has several meanings. First, significant specifics and characteristics of the forecasting are determined. Second, in the context of forecasting, the emphasis is on forecasting and prognosing. Third, theoretical explication refers to establishing the causality of forecasting and planning in order to perceive the dialectical relationship and connection.

***Keywords:*** *forecasting, prognosing, assessment, planning, security functions.*

## 1. Introductory remarks

Global events shape security trends in the realm of national security. Their cascading effects are changing the nature and character of the security function in society and require continuous adaptation through innovation, training, and quality delivery in the security sector. In addition, the nature of contemporary identified risks and threats imposes the need for integrated solutions that will enable appropriate management in the security sector. Hence, the conclusion that is mandated as an imperative follows that the functioning of the security sector in dealing with contemporary risks and threats to security in society is unfailingly based on forecast, the purpose of which is to implement an appropriate response.

The theoretical, methodological, and organizational principles of forecasting are generally applied with pre-established development interests and they can be categorized as strategic and operational level forecasts. In long-term planning and at the strategic level, the intention is to adequately address the socio-economic and security issues that need to be answered as a result of potential and current changes and alternations in the security environment. (Rittel H.W.J., Webber, M.M, 1973: 155–169).

FORECASTING IS A VERY COMPLEX AND DIFFICULT TASK, AND SIMULTANEOUSLY EXTREMELY RESPONSIBLE, BECAUSE THE QUALITY OF THE ASSUMPTIONS OF THE FUTURE ENVIRONMENT DEPENDS ON THE QUALITY AND SUCCESS OF THE SET GOALS, POLICY, AND PLANNED ACTIONS. THIS IS ALL THE MORE SO BECAUSE IN CONTEMPORARY LIVING AND WORKING CONDITIONS, CHANGES ARE VERY FAST AND INCREASINGLY UNPREDICTABLE. THEREFORE, FORECAST MUST BE BASED ON RESEARCH OF THE PAST AND THE PRESENT (STAMENKOVSKI, 2004: 23).

Forecasting is based on scientific and mathematical methods and is a fundamental part of economic and technical studies and sciences, and with the concept of the fourth industrial revolution or the sixth wave of digitization and information in management and operations, it is an integral part of the planning process. As an application or tool, forecast-based approaches are essential in projecting the needs and budget requirements of programs to be proposed by the executive branch and approved by legislation.

ETYMOLOGICALLY, THE TERM PREDICTION COMES FROM THE GREEK WORD *GNOSIS* (TO KNOW), MEANING THAT ONE SHOULD GET AN IDEA IN ADVANCE ABOUT SOMETHING THAT IS SUPPOSED TO HAPPEN. IN THE LITERATURE, THERE ARE NUMEROUS DEFINITIONS OF WHAT PREDICTION IS (KEKOVIĆ, BAKRESKI, STEFANOSKI, PAVLOVIĆ, 2016:28), AND YET THE DEFINITION OF FORECASTING CANNOT BE SIMPLY EXPLAINED BECAUSE IT IS A CONCEPT THAT HAS DEVELOPED OVER TIME IN DIFFERENT CONTEXTS. At the European level, the general definition of foresight implies a systematic, participatory process of gathering information and a medium- to long-term vision-building process intended for decisions in the present time and a process in which joint actions are mobilized. (Regional Development Forecasting Network Handbook, FOREN Guide 2001). According to the European Training

Foundation, forecasting is a participatory, systematic, future-oriented process. When it comes to the development of security forecasts, it uses knowledge from different policy areas to explain the interrelationship of the economy, the education system and training, economic trends and the labour market, the social dimension, and regional and territorial aspects of security. This allows stakeholders to work together to define a common medium to long-term vision for their country or sector, which is the basis for creating coherent evidence-based policies and measures that all stakeholders can accept and implement. According to the European Commission, (strategic) forecasting is necessary to monitor changes and trends in climate change, cyber security, geopolitics, etc. (European Commission, 2020).

The Cartesian approach in forecasting and projecting outcomes, on the other hand, according to traditionalist rationalist and epistemological views, is a mechanism that connects the necessary and sufficient amounts of data for response design. It can help detect crises and black swan events in the latent phase in order to prevent escalation and the initiation of a cascading effect due to the interconnectedness of the phenomena (Golubev, 2021: 23-79).

Forecast, seen both as a sub-function and as an additional function of security management, is a systematic and integral process, based on the concept of inclusiveness, including all aspects of security management, which means using data from heterogeneous domains. This seemingly familiar and taken-for-granted point remains actual and significant, given that forecasting itself is focused on the long-term and strategic aspects of social, economic and security trends in the immediate geographic and political environment and in wider global contexts. Because of these facts and predispositions, forecasting as a derivative of planning and estimation is prone to expected deviations (KEKOVIĆ, BAKRESKI, STEFANOSKI, PAVLOVIĆ, 2016:29).

THEREFORE, FORECASTING IS ONE OF THE MOST IMPORTANT TASKS OF RESEARCH BECAUSE WITH IT, BY APPLYING SCIENTIFIC METHODS, AN ASSESSMENT IS MADE, THAT IS, A FORECAST IS MADE FOR FUTURE EVENTS. SOME AUTHORS EQUATE THE TERM PREDICTION WITH THE EXPRESSION FORECAST, SO THEY USE THE TERM PREDICTION AS A SYNONYM FOR FORECAST. The term prognosis comes from the Greek word *πρόγνωση* (prior knowledge, cognition) and is explained as “determining the outcome of a situation that is already in progress or is expected to be predicted in advance and making a conclusion, or as “predicting the duration and outcome of a certain process or activity that is based on established data”. It turns out that prediction is a more neutral and passive effort in the field of future research, while forecasting is aimed at preparing the basis for planning. (Stamenkovski, 2004: 213-247).

Forecasting is not the end of the assessment itself; it is a means to an end. Therefore, forecasting is necessary: to develop an integral approach to making decisions and taking actions, to contribute to efficient decisions to achieve goals, to maintain the flexibility of the organization, to promote an integrative and proactive approach to organizational issues, overcoming the natural tendency

in most organizations to focus on current problems, isolating them from future or potential problems, to perceive the benefits of the management control and evaluation process in the direction of the realization of the planned goals and to improve the socio-behavioural results in the organization (DCAF, 2015: 13-56).

## 1.2. Factors affecting forecasting

Forecasting as a process is realized according to a certain procedure. Implementation of the forecasts refers to the order of execution of the activities in forecasting the future environment and the outcome of the desired events in that environment. The efficiency and rationality of the forecast depends on the degree of coverage of the activities in the procedure, as well as on the order of realization of the forecast. There is no efficient and rational planning of development and operation without prior forecasting. In other words, the one who plans must also anticipate in order to plan. Therefore, forecasting and planning as processes refer to the future with the intention to improve management. Forecasting and planning are permanently performed activities and are based on the application of the principle of continuous readjustment of forecasts, i.e., goals, policies, and plans (Armstrong, 2001: 87).

Planning as a process of finding alternatives for the outcome of the desired and achievable goals, formulating policy as guidelines for the planning decision-making and the operation of business functions, and making a plan as a quantification of goals and policy, cannot be imagined without forecasting. Without foresight the holders of the planning function are exposed to risk (Louzis, Xanthopoulos-Sisinis & Refenes, 2013: 161).

STARTING FROM THE FACT THAT FORECASTING MUST BE BASED ON AVAILABLE KNOWLEDGE OF THE PAST AND PRESENT, IT CAN NEVER ACCURATELY SHOW THE FUTURE. THE ACCURACY OF THE FORECAST DEPENDS ON THE TIME PERIOD FOR WHICH THE FORECAST IS MADE. THERE ARE SEVERAL FACTORS THAT DETERMINE THE DEGREE OF ACCURACY, NAMELY: AN INADEQUATE BASELINE APPROACH FOR REASONS THAT THE FORECAST IS BASED ON HISTORICAL CIRCUMSTANCES; UNEXPECTED EVENTS, SUCH AS INTERNATIONAL CRISES, NATURAL DISASTERS, ETC.; THE COMPREHENSIVENESS OF THE FORECAST, THAT IS, THE MORE THE FORECAST COVERS A GREATER NUMBER OF EVENTS OR FIELDS, THE GREATER THE ACCURACY AND VICE VERSA; THE LENGTH OF THE FORECAST WHICH MEANS THE LONGER THE FORECAST PERIOD, THE BIGGER THE ERROR CAN BE, ETC. (Stamenkovski, 2004: 238-239). However, the purpose of forecasting is not to determine the absolute accuracy of the behaviour of the investigated occurrences in the future, but the accuracy and precision of the forecast are affected by a number of factors. The fundamental is:

1. Forecast time frame. The time dimension of planning is particularly significant, because the future is determined by the set goals, and the means by which it is achieved differ at the time of planning (the moment of starting the planning action) and during the entire planning period until the moment of achieving the goals. Basically, if one is forecasting for a longer period of time then insufficiently accurate forecasting is allowed, but delayed forecasting is not

allowed, nor is it acceptable to perceive omissions in the forecasting process. From the mentioned appendixes it can be concluded that successful planning and implementation of planning decisions in the future depends on the degree of successful forecasting.

2. Stability of factors and conditions in the environment. This significantly increases the certainty of forecasting the behaviour of a certain system in the future. On the contrary, in terms of frequent changes in the country's politics, the certainty of the forecast, in general, decreases.

3. The degree of possible influence of the operating system in the environment and the methods used in the forecast. It is acknowledged that larger working systems, as a rule, have a greater influence on the behaviour of environmental factors, and therefore have a greater opportunity for certain forecasts about the future and vice versa. On the other hand, the choice of adequate scientific forecast methods significantly increases the number of obtained results of forecasts for the future (Stanković, 2004:23).

### 1.3. Forecasting and prognosing

Forecasting is an explicit procedure for "translating" the information related to the assessment of our environment as well as the developed strategy of the institution into a statement of future results. The principles designed to improve forecasting estimation aim to minimize inconsistency and the different stages in these processes (defining the forecasting problem, approaching forecasting uncertainty, adaptation, and evaluation) (Kandaurova, Borisevica, 2005: 476). The following principles relate to the value of lists, the importance of applying criteria for selecting an assessment method, the retention and use of previous assessments to maintain feedback, the use of graphical rather than tabular data, the advantage of graphical displays in assessment, the use of a variety of access methods towards the uncertainty of prediction, and the need to recognize that the people who approach a success assessment are different from those who will conduct and implement it (Hyndman R.J., Athanasopoulos G., 2013: 134).

Role playing is a way of predicting the decisions of people or a group of people in conflict. To a large extent, decisions can influence people's perception of certain situations. So, when trying to predict someone's decision, it would be helpful if you put yourself in their role. This is especially important in interaction (Side A influences the decisions, Side B makes them, so Side A has the opportunity to react and so on). Due to these interactions, the experts' stances on forecasting are not precise on how sides react when facing new situations. Role playing is especially useful in significant conflicts. For instance, how would the country respond under a war threat? How would managers respond to an employee strike? How would large industrial users react to changes in pricing policy? Role playing is an inexpensive and practical alternative to experimentation. Lawyers often use it to predict jury reactions to various arguments (Armstrong J. Scott, 2001:117). Military strategists also use them for

easier access to various strategies. A series of studies show that for forecasting the decisions of the conflicting parties, role-playing is much more accurate than the opinions of experts. Role playing can also be used in forecasts such as, how would competitors react if we cut prices? In this situation, administrators role-play with employees and consider their decisions as possible outcomes (Ibid, 128).

Such an exercise can produce a realistic simulation of interaction between conflicting groups. Playing a certain role should essentially be related to the real situation, so the role would be similar to the one in the actual situation, so in a way the role players would have instructions for the specific situation. Role playing is most effective when conflicting parties are facing major changes. The number of subjects in the role play should be appropriate to the number of people in the real situation.

Within the forecasting process, the subjective factor plays an important role. Hence it derives that man is the most important active element of every society and, analogously, of every system. Unlike any other active element, it must be present everywhere, regardless of what social activity it performs. Man is the one who is not only engaged, but is also the only one capable of activating himself and all other elements, because the other elements do not possess that ability to activate themselves. Accordingly, the human role in the process of forecasting and decision-making makes it the most important factor in the whole process (Cupara, 1989: 132).

Hence, man is the key determinant in the process of predicting and planning and performing certain tasks. In addition to man, there are other elements that represent a basic assumption for the realization of these goals. It is very important that these elements do not change, because in such circumstances, if there is a change, the method of preparation and decision-making changes substantially. However, one should not forget the fact that without a person there is no decision-making. Therefore, today it is impossible to avoid the subjective influence and the subjective factor in decision-making which is present in the preparation process and plays a real role in the game. This means that it is possible to make certain unintentional as well as "intentional" mistakes, which does not mean that they are the result of the inability to provide the necessary relevant information for making them, but it can mean and that the available elements are neither properly nor considered in detail, which of course depends on the person. This is the biggest challenge of theory and practice, how to provide objective relevant knowledge, which will allow to minimize the subjective influence in the forecasting and planning process. (Bakreski, 2011: 194-197).

Forecasters can improve in reducing inconsistency and bias in human judgment. The principles that are defined for such situations derive from research in the cognitive psychology of collective subjects and are derived from specific predictive content. However, the changes that occur in everyday life mean that the need to set principles and discover new ones should be under

constant supervision. The envisaged principles can best be defined as general recommendations. Their use in certain situations can be particularly useful. In other words, forecasters may benefit from conducting their own informal research in order to discover how they can best use the established principles by experts. Expert opinion is often needed in forecasting tasks, due to a lack of adequate or available information for the use of statistical procedures. And here the question arises: whose opinion is the best? One solution is to use a structured group technique, such as the Delphi method, to select and combine the opinions of experts. With this technique, one party controls the exchange of information between anonymous participants and the number of interactions, with an average of the last interaction estimate as the group estimate. (Scott, 2001: 223).

In many everyday forecasting exercises, statistical techniques may be impractical or imprecise and then expert opinions may be biased in many situations. But which experts should be considered? How much? And which assessment should be chosen? We will try to answer these questions using the Delphi technique, which was developed to help forecasters with expert opinions. Through the implementation of this technique, we can derive general principles for the use of expert opinion in forecasting (Vasiljeva, Muravljeva, 2005: 263).

When we make forecasts in new situations, we often think of analogies. For example, to predict the sales of a new product such as a luxury car, we need to consider the sales of similar products in the past. Findings show that researchers rely on analogous situations in trying to predict the outcomes of different strategies. We can use the analogies for time series or cross-sectional predictions. Many organizations reliably replicate analogy data. What is surprising is that very little research has been done in this field, how to choose an analogy, how to repeat good results, when to repeat and how much can be achieved with analogical repetition (Scott, 2001: 346). Organizations that use time intervals for forecasting often use them for different products or services. Production planning, budgeting, internal management, sales, marketing, and distribution all these intervals depend primarily on the prediction of time series. Also forecasting of decisions in tourism, agriculture, and energy use. Researchers pay much attention to improving time series forecasting, and especially to the method of replicating analogy time series data. (Hyndman R.J., and Athanasopoulos G, 2013: 279).

#### **1.4. The relationship between forecasting and planning**

Since both planning and forecasting are future-oriented, sometimes in theory and in practice a clear distinction is not made between these two terms. Between them, in addition to interdependence, there are also certain differences.

So, in practice, forecasting is often confused with planning. Planning is about how the world should look, while forecast is about how it will look. Planners will use forecasting methods to predict outcomes for alternative plans. Planning directs the prediction, determines what will be predicted, for

what period in the future it should be predicted, what should be the expected accuracy and the need for research in the future, etc. (Scott, 2001: 7-24).

Forecasting results in the creation of an idea in advance about future events that form the basis for making planning decisions, while planning is a process that results in making planning decisions about the behaviour of a system in the future. It should be borne in mind that planning does not include making future decisions, but refers to making current decisions that will be implemented in the future. (Ibid, 24).

Hence, while planning means making planning decisions on the basis of which certain activities are undertaken in the future, forecasting aims to investigate the conditions and possibilities in which those activities will be carried out. (Novkovich, 1996: 51). From the mentioned attachments it can be concluded that forecasting precedes planning, i.e., that based on the assumed conditions, the behaviour in the operation of the system is planned.

In its essence, forecasting is an exploratory act, and planning is a creative process. The results of the planning process indicate the situation in which the certain system could be found in the future, and the planning defines the situation in which it should be found in the future, as well as the way that enables it to achieve the desired situation (Ibid, 52).

## Conclusion

Forecasting is an exceptionally significant planning process function and is aimed at predicting processes and situations in order to ensure the necessary efficiency of the security sector. Thus, forecasting contributes to the planning process to structure actions to achieve goals, which implies that planning is a key tool for determining action strategies. Therefore, it must be taken to ensure that the forecast is detailed and based on relevant knowledge and information so that the planned activities can be made more comprehensive and complete. On the other hand, questions related to planning are particularly important because they indicate the clear dialectic and connection of phenomena and processes that is, they try to designate the basic directions and identified needs. The process of forecasting and planning nominally sets goals and considers alternatives, and creates and traces the way to achieve the set goals.

Forecasting depends on the ability of the professional and competent staff to be able to predict current and future events and situations, but also on the needs and challenges that the entity faces, as well as on the complexity of creating the desired future position. The specified goals that are imposed as an imperative and a challenge determine the future developments, but also the future challenges that the organization has to deal with. The forecast and planning gap contains an assessment of the difference between the desired future state and the state that is likely to occur if the states and processes are not reasoned and assumed. Therefore, forecasting and planning must identify key priorities and take into account all complex situations in order to be in a position to offer solutions for actions that must be taken in order to achieve the

---

ultimate goals of each organization. Therefore, forecasting plays a key role in identifying situations, and through the application of appropriate mechanisms, adaptation is simulated to face the changes in the organization so that measures can then be taken in the planning process to strengthen the resilience of threats, vulnerabilities and challenges that activate and stimulate performance improvements. The identified reasons that impose the need for planning emphasize several aspects. First, it is necessary to realistically perceive the states and processes to ensure the necessary synchronicity. Second, it is pointed out that forecasting and information are one of the basic prerequisites for effective planning. Undoubtedly, both prediction and information are universal categories and are without doubt a central resource of planning. Today it is quite clear that accurate and timely information is extremely important for decision-making and for correct forecasting. Hence, from the predictive amplitude and from the timely information, the plans would turn into reality.

**BIBLIOGRAPHY:**

1. Armstrong J. Scott, (2001) *Principles of Forecasting: A Handbook for Researchers and Practitioners*, University of Pennsylvania, The Wharton School Philadelphia, Pennsylvania, USA
2. Cupara M., (1989) *Ekonomski činilac u vojnom rukovođenju*, Vojnoizdavački i novinski centar, Beograd
3. Dimitrios P. Louzis, Spyros Xanthopoulos-Sisinis and Apostolos P. (2013) Refenes Article first published online: 2013 | DOI: 10.1002/for.2249; The Role of High-Frequency Intra-daily Data, Daily Range and Implied Volatility in Multi-period Value-at-Risk Forecasting
23. Europska Komisija. (2020) *Strateško predviđanje*. [https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight\\_hr](https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight_hr)
24. Geneva Centre for the Democratic Control of Armed Forces, "The Security Sector", SSR Backgrounder Series (Geneva: DCAF, 2015)
25. Golubev, S., S. et al. (2021) Using Ontology in Scientific and Technological Forecasting. DOI: <https://doi.org/10.24115/S2446-622020217Extra-B947p.435-445>
4. Hyndman R.J., and Athanasopoulos G, (2013) *Forecasting: principles and practice*, OTexts, October 17, 2013
5. Кековиќ З. Бакрески О., Стефаноски С. и Павловиќ С., (2016) *Планирање и процена на ризик, Комора на РМ за приватно обезбедување, Скопје*
6. Milne E.T., (1975) *Business Forecasting: A managerial approach*, Longman, London.
26. Rittel, H.W.J., Webber, M.M. (1973) Dilemmas in a general theory of planning. *Policy Sci* 4, <https://doi.org/10.1007/BF01405730>
7. Sullivan G. William-Wayne W. Claycombe (1977) *Fundamentals of Forecasting*, Reston publishing Co. Inc., Reston Virginia.
8. Бакрески О. (2011) *Основи на безбедносниот менаџмент*, Филозофски факултет, Скопје
9. Васильева Л.Н., Муравьева Е.А., (2005) *Методы управления инновационной деятельностью: учебное пособие / Кнорус*
10. Кандаурова Г.А. (и др.), под общ. ред. Кандауровой Г.А. и Борисевича В.И., (2005) *Прогнозирование и планирование экономики, Современная школа*
11. Милисављевић М. и Тодоровић Ј., (1987) *Пословна и развојна политика самоуправног предузећа*, Современа администрација, Београд
12. Михајлов К., (1971) *Деловна политика на работната организација*, Економски факултет-Скопје

13. Новковић Н. (1996) *Планирање и пројектирање у пољопривреди*, Нови Сад, стр. 51.
14. Перик Ж., (1980) *Планирање и пословна политика ОУР*, Саремена администрација, Београд
15. Ристић Ж., (1983) *Научно предвиђање: методолошки аспекти*, Научни скуп: Суштина, методе и значај предвиђања будућности, Суботица
16. Стаменковски А., (2004) *Менаџмент со одбраната*, ТНИД "Гурѓа", Скопје
17. Станковиќ Т., (2004) *Планирање*, Факултет за цивилна одбрана, Белград
18. Шуклев Б., (2002) *Деловно планирање*, Економски факултет, Скопје