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THE 3C DECISION COCKPIT FOR A MARKET-ORIENTED PUBLIC ADMINISTRATION

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Abstract

The paper puts forward a decision modeling by appealing to a vectorization system, similar to one used in aviation – Instrument Landing System (ILS). The decisioncockpit developed by this paper implies a two angle vectorization system: the exogenous system, meaning the system where the independent variables are included and the endogenous system, of which the causal factors are part. The model keeps the main feature, that of being a display of reality.

Theentire argument comes down to tearing down the decision making process and reconstructing it so as to solve its structure problems and to accentuate the points at issue where it makes a change – so as to adjust to reform practices - and how important is this change for the PA reform.

The paper puts forward a decision modeling by appealing to a vectorization system, similar to one used in aviation – Instrument Landing System (ILS). This instrument is in line with a concept developed by professor Patrick M. Georges, that of a *management cockpit*. The *decision cockpit* developed by this paper implies a two angle vectorization system: the exogenous system, meaning the system where the independent variables are included and the endogenous system, of which the causal factors are part. The model keeps the main feature, that of being a display of reality. As these models can take different forms, according to the modeling object and situation, it must be added that this particular model is an analogue one, meaning that it takes a form that can be different from the reality it is describing, unlike a *dummy* model (e.g. speed indicator, thermometer).

Usually, the models used for substantiating a decision are mathematical ones trying to display the issue into an equation system or mathematic expression. Unlike this case, this paper aims at exploiting the bumpy path of instruments that need to be calibrated according the determinant and determinate decision factors in order to use it in the decision making process – the decision vectorization. The instrument explores the possibilities of factors until a solution is found, the touchdown moment.

The principle of this method is „*What gets measured gets done*”. The information is presented in such a way that the decision maker is pushed to pay attention to the objectives and constraints filtered through the 3Cs of decision marketing (the trilemma COST, COVERAGE, CHOICE), allowing him to also make different comparisons.

The model developed is a descriptive one, purely speculative and esoteric, meaning that its transformation into a practical one will have to be done by confronting it with a real situation. The descriptive model aims at understanding the decision making manner, as it is calibrated to react to the way the decision maker would change his / her options once he / she is facing new relevant information.

To sum up, the entire demarche comes down to tearing down the decision making process and reconstructing it so as to solve its structure problems and to accentuate the points at issue where it makes a change – so as to adjust to reform practices - and how important is this change for the PA reform. In order to substantiate the testing of the hypothesis a short case study is developed by the authors so to confirm or infirm the hypothesis. The case study refers to the applicability of the theoretic concept of public decision and its specific characteristics as it pertains to each of the state's powers (legislative, executive and judicial). In

practice, the decision takes different forms: managerial on the level of the executive power, political on the level of the legislative power and legal on the level of the judicial power. These approaches are not separate, but they are embodied by the tri-dimensional view (managerial, administrative and political) of the public decision, as it follows: the government, as a representative of the executive power applies the political decision coming from the legislative level and observes the other adopted decisions. These can refer to changes, suspensions, introductions, repeals, dismissals, replacements, approvals, extensions or reinstatements. The case study is following the evolution of this typology for the Law on the Civil Servants' Statute, Law on the Local Public Administration and the Law on Education. Normally, is the public decision typology righteously balanced in between the 3Cs?

1. Snapshot of decision models

The manuscript presents a snapshot of decision models to highlight the possible similarities or similar uses and differences, whether in structure or in the application of the model. This will seek to emphasize both the usefulness of models on a theoretical level and the signaling of their practicable use (see Table 1 in the Appendix 2). The modeled developed in the end uses different parts of these analyzed models, depending on the applicability and appropriateness. The models under investigation are:

1 Decision Forecast Analysis (APD)

(Quade, 1970; Tudosescu et al., 1976)

2 Cost – Benefit Analysis (ACB) (Battiatto, 1993; Williams, 1993; B nacu, 2004; Dinu et al., 2004; Boardman et al., 2004; Nuti, 1987; Petretto, 1987; Schmid, 1989; Florio, 1990)

3 Multi-criteria decision evaluation (EMD)(Munda et al., 1993; Roberts, 1979; Zadeh, 1965; Matei, 2008)

4 Hierarchical Modeling of group decision (MIDG) (Saaty, 2008; Jablonsky, 1997)

5 Cooperative decision Model (MCoD) (Fiala, 1997)

6 Multi-attribute decision Model (MDMA) (Keeney and Raiffa, 1976; White et al., 1984; Park and Kim, 1997)

7 Porter aying (reference to Michael E. Porter) the public decision (PDP) (Porter, 1979, 2001)

8 Decision cockpit Model (MCD) (Georges, 1997, 2002)

2. Important facts

The human brain is like a powerful computer with a latent unlimited capacity. But because of the usual patterns of thinking, people use only a small part of that potential capacity. The decision talent is

based on how this pattern of thought is improved and the power to reject ineffective models.

Efficiency criteria such as income per capita were traditionally used to assess economic progress, welfare increase, growth prospects and plans' social value. In the last two decades it was understood that welfare is a multidimensional variable that contains, among other things, the average income, growth, environmental quality, distributional equity, the supply of aid / public facilities and accessibility. As a result, not only monetary consequences, but also non-quantifiable impacts of public decision must be taken into account. This involves a systematic assessment of plans and public projects that must be based on differentiation and measurement of a broad set of criteria. These criteria may be different in nature: private economy (investment costs, rate of return, etc.), socioeconomic (number of employees, income distribution, access to aid, etc.), environmental (pollution, damage to natural areas, noise), energetic (energy use, technological innovation, risk, etc.), physical planning (e.g. in terms of congestion, population density, accessibility) and others.

As a result, the decision-making techniques are a suitable modeling tool. But to fit real world problems, these methods must deal with the imprecision and uncertainty often present in the available information. It is not plausible to establish a better method to be used in an a priori empirical problem: the conditions under which these methods can be applied best are dependent on context, so the task is to choose the correct method for a specific problem.

The field chosen by this research is far lacking in saturation, the public knowing a shift to growth through innovation only in the recent years. The adaptation of specific private economy mechanisms to public economic structure to reflect the administrative gaps became a concern of both theorists and practitioners. It is necessary to establish a clear vision, a clearly defined mission - always well realized by the public sector - but increased focus on the input-output analysis is what provides a long-term approach. Thus, it emerges the need to create a simple, flexible and efficient system for the allocation of public resources, to streamline the government decision in this case by using the methods / techniques that seek to evaluate economic theories, explain economic principles by developing and applying quantitative and statistical methods and models that allow processing the uncertainty information and which do not leave out the institutional complexity in the field.

Modeling is the link between theory and economic, social, political or administrative reality, with the help of specific tools and techniques. A complete model is an operational tool useful to decision makers. Modeling formalizes the links and

interdependencies within a decision-making system, thus structuring solutions.

In the economic life, for example, laboratory experiments are not possible, as most economic dimensions change, influenced and influencing all other dimensions. Thus, methods were developed just for non-experimental data analysis. Moreover, the economic relations are not accurate as considered by the economic theory. The economic behavior is somewhat uncertain, being affected by unforeseen events.

The tools that models use are designed to:

- Identify the characteristics of the studied phenomenon;
- Test the statistical hypotheses on issues specific to the studied phenomenon;
- Make predictions for a given time horizon.

Interesting to note is that those who make arguments for decision making are not those who actually take the decision. Literature in the field often reveals that human mind heavily digests hard arguments, arguing for example for simplicity. We see thus arguments for "theoretic deconstruction", which means removal of elements from the model that give complexity and reducing them to a level close to the theoretical models in the field literature.

Formalizing simplicity takes different forms, as follows: William of Ockham - Occam's razor (also known as Occam's Blade) - "Entities should not be multiplied beyond the necessary" (Thorburn, 1918), *parsimony law* - "in vain do more what can be done by few" (Feynman, 1965), Sir Isaac Newton - nature is simple, so the unnecessary causes should be avoided (Newton, 1687), Fisher (maximum likelihood principle) - the system must not contradict any known fact, the simplest system must be chosen and that system which provides most chances to observed facts (Edwards, 1992).

The need for measurement in the public sector comes from the need to "Work Better and Cost less". Furthermore, it aims to even develop the concept of "managerial state" (such as management accounting - Balanced Score Card BSC). Another type of approach is the evaluation framework. This approach is based on the idea that performance should be considered to analyze a number of indicators.

All in all, performance has two components: first, efficiency (technical, allocative and dynamic), which describes how well an organization uses its resources, and the next, effectiveness, to what extent the system carries out its programs and achieves its objectives. Effectiveness pursues several aspects connected to the program objectives. Namely: the availability (on price, representation in priority groups and physical availability), appropriateness (customer satisfaction) and quality (achievement standards).

Those in charge of administrative and economic model development should focus more on solving problems that matter, than those that are mathematically attractive. Thus, choosing the appropriate technique or mechanism should consider the reason (that of clarifying the relationship), the objective (to forecast, not necessarily understand) and possible scenarios.

3. The Exogenous variables

Trying to fold a mechanism – specific to private economy – on the public economic structure is not new. The premises of this test have always been clear. As a private corporation, the public system also works with people, objectives, timelines and strategies, which induce the idea of an easy application of private instruments. Business strategy was often called an art of imbalances, by reference to the rich resources used to achieve limited objectives. Therefore, a public strategy may be called imperfect art, as it aims to use limited resources to fulfill very different purposes. The difference between the two segments, public – private, not necessarily related to the amount of money available, but the fact that a private corporation may limit its objectives depending on existing resources, as opposed to a public institution that must be dedicated to objectives which are often aimed at social, not financial fulfillment. Moreover, where a market is concerned, it comes to an allocation mechanism and it is easy to understand that is not the case of the government, which must not only choose a correct allocation that must provide public welfare, but also an efficient allocation.

The economic resources at the public sector's disposal should be administered with great care and responsibility, giving the government's noble task to estimate the public need for public goods or services whose distribution or provision is in charge with.

Considered to be very important during the research, the zoom type analysis allows an overview of the environment that creates conditions that restrict the use of applied mechanisms. This macro analysis must attach to public "industry" a certain type of organization and expression, which fits best and which determines the appropriate decision, which leads to sub-decisions in the micro analysis.

Taking into consideration the focus on results and efficiency of the public "industry", it seems natural to import analysis models commonly used by corporations wishing to enter a new market and seeking to cover the risks of such an adventure, a deep knowledge of business and, therefore, the type of decision to be taken. These corporations make up a profile of the industry, which helps define the strategy and decision-making process, and often is being used the Porter's Five Forces (Porter, 1979,

2001) or decision cockpit of professor Patrick Georges (Georges, 1997, 2002).

Public resource allocation decision is a complex process which requires considerable efforts in two directions: first, the current state of evaluation in terms of budgetary constraints, the legal framework *ius cogens*, evaluation mechanisms, time, training, critical situations, decision-making and communication tools, and second, the observation of differences to be reduced for efficient resource allocation. This simulation framework allowing to assess the position of public resource allocation, defined according to several variables - using a polar diagram, is the one that triggers the proposed model (see Figure 1 in the Appendix 1).

4. The endogenous variables

The research does not propose a single variable model. Moreover, the model developed by this research is not considered alternative, but is recommended by reference to effective elements of specific problems of public administration.

As noted by Stiglitz (1999), public decision-maker in the public economy is concerned with solving problems that can be summarized as four questions: 1. What is produced? 2. How is produced? 3. For whom is produced? 4. How will these decisions be made? Seeking to address these questions the research actually suggests to calibrate a endogenous variable of a three-fold structure, so to respond to a decision trilemma (see Figure 3 in the Appendix 1).

So, the first sub-variable answers the question related to the important aspects of *how are these decisions made?*. Vital analysis elements relate to public sector knowledge and the organization, anticipate consequences, evaluation of alternatives and the influence of political factor. The second sub-variable addresses the issue of public sector costs. This one does not seek to restrict the many public sector-specific decision making situations, but aims at grouping them according to their most common problems identified in the area of market failure, such as the inability of individuals to cooperate, failure to obtain the best results, the need to resolve situations where an individual's actions impose costs on another individual - negative externalities. The last sub-variable focuses on the issue of "coverage" of needs, represented by the distribution function of the state. The model chosen allows the inclusion of all relevant decision-making elements, namely the distribution problem, ultimately aiming at tackling the incomplete market problem.

5. Calibrating the model

After defining both the contextual exogenous variables and the three Cs endogenous variables, with the help of the polar diagram, the exploration of the correspondence between the two can take

place. In theory, each variable will give a coordinate on the decision cockpit, which in the end will pinpoint all the possible combinations of the two. The model, as subjective as it may be, due to the sensitive feature of some of the defined variable, will lead to an optimal combination of factors that can improve the decision making process. In fact, the decision cockpit provides us with a broad image of the relation between the defined variables, being able to display at the same time whether different variables are directly or inversely related (see Figure 3 in the Appendix 1).

6. Conclusion

As part of the decision making mechanism, the mentioned decision analysis take the form of certain authorization models or public acknowledgement plans. The way the conclusions and recommendations should be presented is as important as the actual analysis. An overview must be clearly offered in order to satisfy the need of information of the decision makers. The shown evidence must not only be sufficient, but should also point to the right reasoning. For those whom are making the decisions, the analysis must be clear, so that they easily identify the reasoning evolution - Challenge → Action → Result.

The progress of decision techniques is an incredible one and not to be ignored. Finally, in recognition of this development that offers infinite possibilities for innovation today, we must not forget the blockstart of these techniques, the first recorded technical decision, that used by Benjamin Franklin (Parton, 1846), and the numerous decision models that followed and that have been carefully analyzed, so that many of their useful elements can bring significant value to our decision cockpit.

Biography

Teodora I. BITOIU - Scholar within the project "Doctoral and Postdoctoral Fellowships for young researchers in the fields of Political, Administrative and Communication Sciences and Sociology" POSDRU/159/1.5/S/134650, with the financial support of the Sectoral Operational Programme for Human Resources Development 2007-2013, co-financed by the European Social Fund.

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Appendix 1

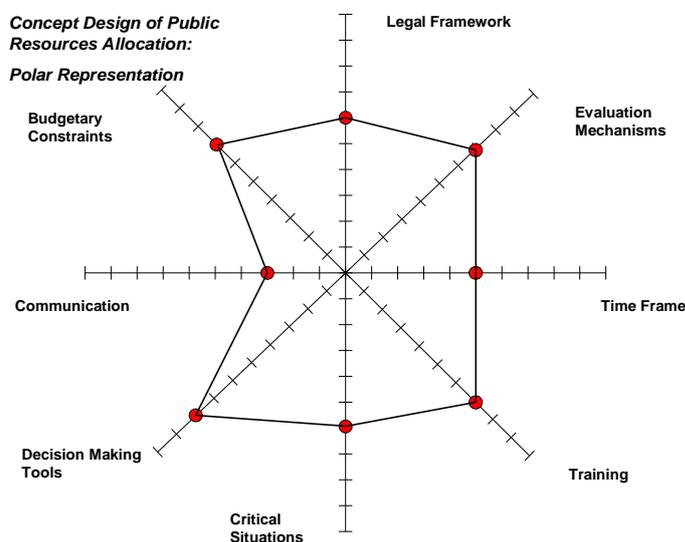


Figure 1. Resource allocation

Source: own elaboration in accordance with the instrument specific to the operations management – The polar diagram

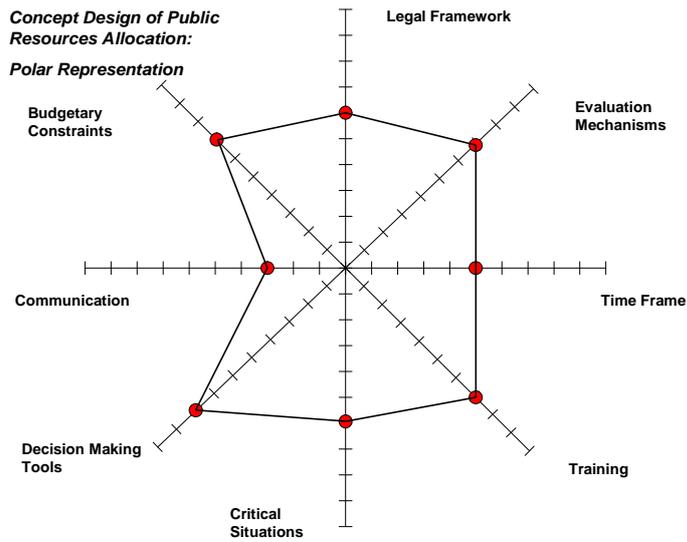


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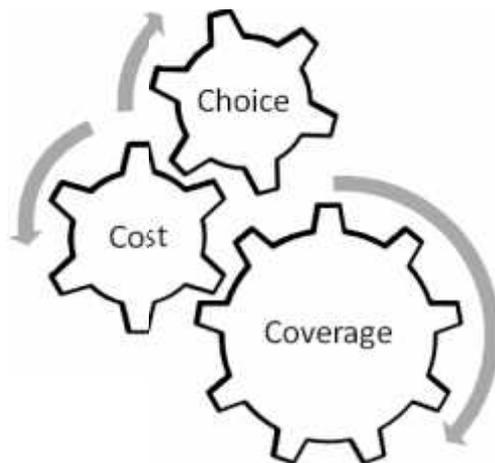


Figure 2. Decision trilemma

Source: own elaboration

Table 1

Model	<i>Question</i>	<i>Where is the model applied?</i>	<i>Is it applicable in the public system?</i>	<i>What is specific, particular?</i>	<i>What is the number of factor implicated in the decision-making process?</i>
Decision Forecast Analysis (APD)		The financial and economic activity	Local level Short term	Uncertain information, based on deciders experience and opinions	n/a (must be defined – dependent and independent)
Cost – Benefit Analysis (ACB)		The origins – developing the water reserves Welfare economics	Broadly used (limited resources allocation)	Maximizing the „ social profit”	Three-folded (political, administrative and social environment)
Multi-criteria decision evaluation (EMD)		Modern planning problems, of conflictive nature	Useful for the public sector because it considers elements of human life and welfare	Gives the possibility to include intangible and/or immeasurable effects	More decision factors (often from more levels)
Hierarchical Modeling of group decision (MIDG)		Global compromise scenario, negotiation process	Group decision-making	Developed on four stages	n/a , but it implies an assessment of the parties importance
Cooperative decision Model (MCoD)		Consensus in cooperative decision-making	Provided free communication between deciders exists	Five approaches of the conflictive management: avoidance, adaptation, forcing, compromise, common problem solving	Multiple decision factors with multiple goals
Multi-attribute decision Model (MDMA)		Method for establishing a dominance of the alternatives considers by a decider under time pressure and lack of knowledge	It is applied because the decider is predisposed to provide incomplete or partial information	Intangible or non-monetary attributes because they reflect the social or environmental impacts	Single decider (selects one or more alternatives)
Porter (Reference to Michael E. Porter) aying the public decision (PDP)		Analysis model used by corporations for making a profile of the industry, helping them to define their strategy and decision process	n/a (there are no references in the field literature)	Uses the Five Forces Model of Michael E. Porter	Involves a decision centre
Decision cockpit Model (MCD)		Design concept of a cockpit for managerial meetings and structuring the managerial meetings performance	n/a (there are no references in the field literature)	Increases speed, quality and safety of the intellectual activity of the deciders	One or more decision-makers