The informatics system of costs and its role in the control and management of forestry units'activity

Tenovici, Cristina and Parpandel, Denisa Elena

University Constantin Brancoveanu Pitesti

11 March 2010

The informatics system of costs and its role in the control and management of forestry unit's activity

Lecturer Cristina Otilia Ţenovici, Ph.D.
Teaching Assistant Denisa Elena Parpandel, Ph. D. Candidate

Faculty of Management Marketing in Economic Affairs, Rm. Vâlcea,
"Constantin Brâncoveanu" University, Piteşti, România,
cris2001vl@yahoo.com

Abstract

In the administration of forestry units' activity, economic information offers the necessary elements in what concerns the administration and use of resources, it allows for the critical analysis of the negative effects and the taking of corrective operative measures, as well as for the usage of positive effects for the optimization of the activity.

A dynamic management of the productive activity based on science requires, from the decision-maker, a careful observation and a methodical knowledge of the phenomena that take place within the enterprise, the expression of economic phenomena through an adequate system of indicators, the establishment of functional relationships through mathematic theories and techniques, the usage of functional laws or relationships for the construction of economic and mathematical optimization models and for the elaboration of development strategies and of an informatics system for the economic record and analysis, which would allow, at any moment, an optimal decision-making for an efficient management of the enterprise.

Keywords: dynamic management and control, informatics system, optimal decision, forestry

Within the leading procedures of the activity of forestry units the economic information is the one that provides the necessary elements related to the way in which resources are used and managed. This information also allows critical examination of negative effects and taking certain operative steps of adjustment, as well as making use of positive effects in order to improve the activity[1]. The exploitation of economic information is done only within an economic informational system.

The informational economic system comprises all the data and information that circle in a cybernetic system, all the procedures and methods of processing

[1] Tenovici Cristina Otilia (2007) *Designing the Informatics System for the Calculation and Analysis of Forestry Costs*, Universitaria Publishing House, Craiova, Romania, p.18

them, including the circuits and data support, concerning the content of information, their logic meaning and not their formal structure, as it happens in the case of systems based on informatics. An informational system may exist even in the absence of one based on informatics, whereas vice-versa is not possible.

The informational system related to the forestry activities should therefore provide the leadership/administrators with information concerning the state of the system, its structure and the field of display of possible decisions that should be taken at some point.

A dynamic leading of the productive activity on scientific basis requires from the decision-maker considerate attention and methodical knowledge of the phenomena that take place in the industry, being able to express the economic events with the help of an adequate system of *indicators*. Moreover, it requires the ability to establish the functional relationships through the medium of theories and mathematical techniques, the use of rules or the functional relationships for the building of mathematical and economic models used for the improvement and the elaboration of the developing strategies and of the informational system which keeps evidence and economic analysis, including the analysis of costs, which allows making a beneficial decision that shows an efficient leading of the industry at any moment.

As a consequence, knowing and making use of the modern methods and techniques of leaderships that have a scientific basis is of great importance, both theoretically and practically speaking. This way, the information becomes the "raw material", which is indispensable to the leading process, but, at the same time, it is also the connection between the leading and the execution processes. This is the only way in which the decision-maker has permanent control over the actions held in the industry, in each branch of activity; not to mention that he had the possibility of actively interfere upon them at any time.

Running a forestry unit involves on one hand excellent knowledge of the current activity and being able to come up with ingenious decisions regarding its progress, and on the other hand the ability to foresee its evolution and frame the prognosis which delineates the future plans for progress. The information makes the leadership interfere through decisions that have the role of establishing certain objectives, to organise and conduct the collective actions for the pursuit of reaching the goals. The decision represents the key moment of every leading process because all the functions of leading gravitate around it. By making a decision, the leadership expresses their option for the most convenient way of acting of all other possibilities. The decision, based on gathering information, has always been a means of intercession in the coordination and supervision of economic activities.

Making use of modern methods and techniques of leading offers the decision great precision and fairness. Therefore, the mathematical shaping of the

economic processes, the developing and the application of operational research, cybernetics and computer science are the most considerable findings that science offers to economic leading. The decision, as part of the decision-making process, does not represent a goal by itself, as it has to be correctly applied through the medium of definite acts and actions, its finalisation depending on the capability of the performers.

The building of a modern informational system in forestry units considers the solving of certain problems so that in the end the informational process identifies itself with the one related to making a decision. When wanting to make a decision one always starts by considering the existing result and thinking about a new aim. The necessity of making a decision is revealed when a problem occurs at the managed sub-system and needs urgent solving. The decision is also influenced by the human factor and the environment of the unit, because any political, social, economic or even technological changes should be taken into consideration both nationally and internationally, especially now when there is a pronounced tendency of globalization. This fact implies the development of the complexity of making a decision, leading to a rise in the number of variables and limit conditions regarding the decision.

The informational feed which is organised and structured in this way ensures on one hand the connection between all compartments, both horizontal and vertical, and on the other hand it provides information that leads to the starting of decision-making on different levels, with the purpose of leading and adjusting all the activities that are in the system.

The reduction of the amount of information is another problem which should be considered within modern informational system, and should refer to the selection of data which is necessary for the monitoring of the activity from all points of view. Information has a relevant character that is actually the practical criteria in the selection and distribution of information. In other words, the selection is made very carefully and it refers only to information that expresses essence and is characteristic, in a very precise form and regarding all aspects, of the phenomena and the activities deployed. Economic awareness needs relevant information, this need being determined by the system of pointers through which the internal and external requirements are satisfied.

Another important issue related to the modern informational system is the selection and ranking of information. The selection refers to opting for a part of the amount of information which will be transmitted, with the purpose of establishing the nature and the amount of information on fields of leading and centres of accountability, specific to each particular activity.

Within the modern informational systems, the selection and ranking of data are done, generally speaking, through the application of the awareness and reporting system in a stacked manner, the information going up and down as a pyramid that has at its basis aboriginal data and information which are necessary

for the operative leading. As the information goes up towards the peak of the pyramid, that is the superior leading centre, it becomes more aggregated in order to allow a general perspective on the major aspects of the economic activity. The selection and ranking of the information is therefore a hard problem and requires experience, high grade of competence and critical spirit for a correct analysis.

The predicting character of information, contrasting the statistical one of the traditional information, emphasises the predicting information in modern informational systems. This is the major requirement of cybernetic systems, because only the predicting information chimes with the requirements of adjusting the activity. Information, cybernetic ally speaking, has a sensitive and predicting character that is foisted by the requirements of the command centre, and that is waiting to be seen right at the moment when the problem occurs. Relying on optimised estimations, the information that is prefigured in programmes or precalculations is going to become the reference and reporting points, towards which current and post-operative information gain the role of pointing out the deviations.

The promptness of information becomes a primordial requirement of the modern leading systems, because late information is not only ineffective, but it also produces a small effect or even a contrary one. The lack of promptness represents the major deficiency of traditional informational systems, being an inconvenient that has to be eliminated within modern informational systems.

The unitary methodology of choosing and processing information takes into consideration that the lack of a unitary conception in organising traditional informational systems has been the major cause of the disjunction of informative work and the parallelisms known in the record work, where the same type of data were recorded in various documents which were processed at the same time and on different transmission channels. As far as the unity of the informational and decisional process is concerned, a modern informational system requires the organisation and operation of the industry as a unitary system, the entire activity being collocated and its functions are carefully integrated and harmonised.

The basis of the organising and leading of forestry units consists of the principles of economic management, through which recuperation of costs from own incomes, assurance of an increased profitability and effective use of production factors are supervised. The needs of leading work determine the objectives, functions and methods of the informational system, within the cost informational system that has the central place. The complexity and diversity of cost studying objectives determine the use of a range of different methods and procedures with the aim of reaching the determined goals. The use of these methods and procedures, practically speaking, does not happen separately, as these are integrated in a unitary methodological system, fact which demonstrates the complexity of the system, this being the reason why it can be considered an integrated system.

The integrated system related to costs from the forestry field implies the absorption, merger or inclusion in a unitary whole of information about costs, the methods, procedures, physical means and techniques used in the processing of this information, within the planning, controlling, tracking and analysing costs.

The integrated informational cost system can be defined as representing an ensemble of complex economic information (analytic, valuable and quantitative synthesis, planning and effective) related to acquisition, production and retailing costs, to the data obtained through automatically processing information, data which derives from all the bodies of industry and which is necessary in the unique informational process of all these bodies, so as to normally improve the material, financial and human resources, congruent with people's expectations from life.

The integrated informational cost system contains the following:

1. The ensemble of the economic information regarding costs – planning information which determines the costs for future administration periods; actual information regarding the costs of the finished administration period. This information aims at both quantity and quality aspects, subsequently becoming analysis and cost control information.
2. The transformation process of the data or the cost information – it aims at the ensemble of the gathering, transmitting, practical transformation, revaluation and conservation of the data, as well as the integrated use of technical means (manual or automatic) of information or economic cost data transformation, by employing a well designed methodological system.
3. The economic information sources regarding costs are different as they either concern planning information or actual information. The first is generated by the budget of the costs which are the grounds of financial-economic planning, whereas the latter is based on accounting evidence, statistics and operative evidence[1].

The integrated informational cost system in forestry can be categorized into three subsystems: formation or cost calculation; control and cost analysis; organization of forming or calculation, of control and cost analysis[2].

The integration of these subsystems into a compact system is based on several fundamental traits or commonly and mutually active factors:

1. The first fundamental factor consists of the fact that the subsystem of formation or cost calculation, including its two distinct aspects – pre-calculation and post-calculation – is incomplete and not thoroughly organized without cost analysis and control. Moreover, control and cost

[1] Baciu Achim (2001) Cost: Organization, Planning, Accounting, Computer, Control and Analysis, Dacia Publishing House, Cluj Napoca, Romania, p.51

[2] Tenovici Cristina Otilia (2007) *Designing the Informatics System for the Calculation and Analysis of Forestry Costs*, Universitaria Publishing House, Craiova, Romania, p.20

analysis are unconceivable without pre- and post-calculation;

2. The second fundamental factor is defined through the fact that the first two subsystems – the one of formation or cost calculation and the one of analysis and control – do not own a stable form of materialization, since they only acquire real content by organically intertwining with the methodological subsystem of organizing the informational cost system in fields of expense centres and in expenses and costs owners. Meanwhile, the organization methods of the informational cost system only acquire a concrete content through the methodological subsystems of formation or calculation and of control and cost analysis;
3. The third fundamental factor is common to all or most of the transformation methods of cost information and is shaped through the fact that the unique process of this data transformation generally runs the same stages, phases and moments, throughout which the same problems are being taken care of and which generally use the same devices, regardless of the applied methods. This factor is generated within each one of the three subsystems, especially the first one – the subsystem of formation or cost calculation, which also gets divided into two lower subsystems: the subsystem of cost pre-calculation and the subsystem of cost post-calculation[1].

The aim of the integrated informational cost system is the entire gratification of the informing requirements at the level of forestry unity (forestry department), both synthetic, so they can allow the integration of activity functions and departments at higher managing levels, and especially very analytic information which can assure the integration of several operations as elements of the entire economic unit.

The system must assure the transformation and handling of a very large amount of economic data coming from all the activity fields (forestry districts) and pointing to the needs of all these fields of the economic unit. Such an amount of information implies knowing and managing a data transformation process which is extremely complex. This way, after the gathering and registration of the data, this will be used inside a process of transformation in many possible and useful ways and will be used for any working scheme, each and every time this will be necessary, and without intermediary transcription. This working method is unconceivable without the automatic transformation of the data with the help of electronic computers. Some specialists even consider “the integrated system” and “the data transformation through computers” to be equivalent.

Organizationally speaking, the integrated informational cost system in forestry is based on the conception of activity functions and fields of the agency being considered independent parties of a compact structure, this mechanism

[1] Baciu Achim (2001) Cost: Organization, Planning, Accounting, Computer, Control and Analysis, Dacia Publishing House, Cluj Napoca, Romania, p.52

being generated by the integration of functions and activities from which economic information is delivered and transformed. The informational cost system in forestry is bound to assure the functioning of the structure as a unitary mechanism, whose constituent parts are thoroughly assembled on a coherent, integrated base.

References

Baciu Achim (2001) *Cost: Organization, Planning, Accounting, Computer, Control and Analysis,* Dacia Publishing House, Cluj Napoca, Romania

Calin Oprea, Carstea Gheorghe (2002) *Management Accounting and Cost Calculation,* Genicod Publishing House, Bucharest , Romania

Tenovici Cristina Otilia (2007) *Designing the Informatics System for the Calculation and Analysis of Forestry Costs*, Universitaria Publishing House, Craiova, Romania