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ECONOMIC AFFAIRS

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CONTENTS

RESOURCE UTILIZATION AND SUPPLY

Long-Range Supply Planning Reviewed
(A. Baskin; VOPROSY EKONOMIKI, May 81) 1

REGIONAL DEVELOPMENT

Rutgayzer Reviews Shamov's Book on Regional Management
(V. Rutgayzer; VOPROSY EKONOMIKI, Apr 81) 11

INTRODUCTION OF NEW TECHNOLOGY

Study of Cost-Effectiveness of New Technology Urged
(A. Borodkin; VOPROSY EKONOMIKI, Mar 81) 15

- a -

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RESOURCE UTILIZATION AND SUPPLY

LONG-RANGE SUPPLY PLANNING REVIEWED

Moscow VOPROSY EKONOMIKI in Russian No 5, May 81 pp 45-53

/Article by A. Baskin: "On the Long-Range Planning of Material and Technical Supply"/

/Text On the basis of the economic strategy of the party the 26th CPSU Congress set for material and technical supply the following main tasks: "To strengthen and improve the statewide system of material and technical supply, to increase its role and responsibility for the efficient use and saving of material resources and the continuous supply of the national economy with raw materials, materials, equipment and spare parts."

The achievement of a dynamic balance requires the drafting of long-range plans in all the spheres of social production, including the production infrastructure. Material and technical supply, being a component of the infrastructure, influences many aspects of production activity. Therefore the development and improvement of production presume the corresponding positive changes in the distribution and circulation of products for production engineering purposes and in the methods of forming and implementing economic ties on their deliveries.

Here advanced forms of supply: direct long-term economic ties, the guaranteed complete supply of consumers on the basis of contracts which are concluded with the organs of USSR Gossnab; the complete supply of construction projects with materials through the territorial organs of USSR Gossnab in accordance with the orders of construction and installation organs; additional services on the preparation of the products being supplied for use and their centralized delivery, are playing an important role.

The development of the indicated forms of supply should be carried out according to a plan, with allowance made for the current material prerequisites of the organization of the purposeful and efficient movement of products with a breakdown by sectors and regions. A long-range plan, which makes it possible to plan the end results of the activity of material and technical supply in unity with the conditions of their achievement, is needed for this. At present the level of the organization of supply still does not meet the requirements of production. The proportion of advanced forms of supply is inadequate, the volumes of products being delivered to enterprises with a high degree of readiness for use are small, and so on. The long-range planning of supply is a system of measures, which is aimed at the gradual elimination of these shortcomings and the increase of the quality of the service of production.

1
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Here it is possible to distinguish two main aspects: the development of an efficient system of the material supply of production and the planning of supply as a sector of the socialist national economy, which carries out the distribution and circulation of products for production engineering purposes. Both aspects should be reflected in both the intermediate-term five-year plans and in the long-range--20-year and 10-year--plans. However, the composition of the indicators of each of these plans will be different.

The indicators of the former determine the direction and nature of the use of material resources in the national economy, the development of effective forms of the distribution and circulation of products for production engineering purposes and the results of the improvement of the system of the material supply of production from the point of view of its influence on the intensification of the socialist economy. The indicators of the latter determine the development and improvement of the economic potential of the set of enterprises and organizations which form the sector of material and technical supply. The sphere of each of the mentioned plans has specific limits. At the same time they are closely interconnected and govern each other. Here the forms of the material supply of production and the scale of their functioning require the development of the material and technical base of supply.

The development of material and technical supply is a part of the comprehensive program of scientific and technical progress, which is being compiled for 20 years. The goal of this part of the program can be defined as the tasks of supply for the long-range future in conformity with the increasing needs of the served sectors of the national economy and with the conditions which are necessary for the achievement of the outlined results on the basis of scientific and technical progress. The most general directions and consolidated indicators of an economic nature should be established in the 20-year program.

The planning of supply as a system of the material supply of production should include the following indicators: the level of material expenditures (excluding amortization deductions) per unit of the gross national product or the materials-output ratio of social production (the value of the used natural resources per unit of the produced national income); the stock-output ratio of social production, which is calculated as the ratio of the value amount of the stocks of products for production engineering purposes (as a whole and excluding unfinished production and construction) to the gross national product or the national income;¹ the proportion of products which are delivered in a state of complete readiness for consumption in production.

This group of indicators makes it possible to program the main goals of supply for the long-term future and to determine the fundamental demands on it on the part of production.

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1. Here it is necessary to ensure the possible completeness of the amount of stocks, which include all production stocks, including those in agriculture, and stocks of equipment--uninstalled and being installed. At the same time, since it is a matter of the indicators for the material and technical supply of production, products subject to use for personal consumption should not be included among the stocks.

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Among the indicators of the development of supply as a structural subdivision of the national economy in the 20-year program it is expedient to envisage: the capital-labor ratio of the sector of supply; its proportion in the total amount of fixed production capital of the national economy; the national income formed in the sector of supply per worker. Along with such indicators the scientific and technical, economic and social goal programs of the development of the supply of individual regions and territorial production complexes and the plans of measures on the solution of major problems of the improvement of material and technical supply for the future should be an important part of the 20-year program. This part of the overall program is aimed at determining the means for achieving the planned indicators of a general economic nature.

The goal programs and measures being planned should ensure: the shortening of the time between the moments of the appearance of the demand for a product and its satisfaction, the acceleration of the turnover rate of stocks, the increase of the reliability of supply, the stepping up of the influence of organs of supply and marketing on the use of material resources and production capacities in industry, construction, agriculture and transportation, the overall shortening of the time and the decrease of the level of the costs of social production, the increase of the keeping capacity of the produced output at all the stages of its movement, the gradual elimination of difficult manual labor in the performance of warehousing operations and so on.

The creation of the conditions for the acceleration of scientific and technical progress by the adoption of advanced forms of the material supply of scientific research and experimental design operations and of goal programs on the production of new technology, as well as the extensive use in the sector of material and technical supply of the achievements of the scientific and technical revolution in the area of the processing of data on material flows, in the area of storage and in the area of the transfer of products are especially important.

In addition to programs on the efficient use of material resources, during the coming 20 years it would be advisable to envisage and implement the following measures: the development of the system of production service on the preparation of products for use at enterprises of material and technical supply; the organization of the material supply of consumers under the conditions of the rental of the equipment which they use occasionally; the creation of an integrated system of the automated control of material flows and stocks in the national economy; the development and adoption of advanced technological processes, highly productive machines and equipment, which ensure the complete mechanization and automation of loading, unloading and warehousing operations in industry, construction, transportation and material and technical supply; the drafting and adoption of long-range national economic goal programs of the comprehensive development of the warehousing services of the country and of the use of advanced types of packaging and wrapping.

Indicators, which approximate as much as possible the indicators of the five-year plans which pertain to material and technical supply, should be included in the Main Directions of USSR Economic and Social Development for 10 Years. Therefore, there should be included in the 10-year plans as the main indicators of supply as a system of the material supply of production the balances on the most important types of products, which specify the main directions of the use of resources during each of the five-year plans. At the same time the expenditure part of such balances may differ from the corresponding indicators in the five-year and annual plans of

3
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supply. Thus, with respect to the item "production and operating needs" it is expedient to take into account the distribution of material resources according to the main directions of their use as applied to the backing of comprehensive scientific and technical, economic and social programs, as well as the programs of the development of individual regions and territorial production complexes (for example, for the production of equipment and machines for the mechanization of loading and unloading, materials-handling and warehousing operations, for the implementation of nature conservation and nature restoration measures, for the development of the regions of Siberia and the Far East and so on).

The nomenclature of the balances, which will be elaborated within the Main Directions of USSR Economic and Social Development for 10 Years, is of substantial importance. It cannot be extensive and differentiated, since it should specify only the main proportions of the material supply of production. At the same time the number of these balances and the degree of aggregation of the output should ensure the proportionate development of the main sectors of the economy and the pursuit of an effective investment policy. Thus, USSR Gosplan is elaborating for the next 10-year period balances on 168 most important types of products, while USSR Gosstab is elaborating them for 28 most important types of products.

Moreover, in the 10-year plans it is advisable to use estimated and standard indicators of the material supply of production, such as the level of material expenditures per unit of the gross national product or the materials-output ratio of social production; the stock-output ratio of social production; the proportion of deliveries of products, which are carried out by way of direct long-term economic ties and guaranteed complete supply, in the total commodity turnover of the means of production; the total value of the equipment being offered to consumers under the conditions of rental, and so on.

The elaboration and use of these indicators involve the solution of fundamental procedural and organizational problems. Among them the determination of the value amount of the products, in the sale of which the organs of material and technical supply take part (at present it is customary to call this indicator the wholesale commodity turnover of means of production), and the amount of deliveries in accordance with direct long-term ties is of great importance. At present both of these indicators are not fully planned and taken into account. Thus, the indicator of the wholesale commodity turnover does not cover the majority of products which are delivered as transit goods without involvement in the settlements of supply organs, although supply and marketing organizations, especially of the system of USSR Gosplan, do enormous work on the planning, organization and supervision of these deliveries. According to the estimates of the Scientific Research Institute of USSR Gosstab, the wholesale commodity turnover of the organs of material and technical supply now includes not more than 65 percent of the volume of industrial output for production engineering purposes. At the same time a significant portion of the turnover of the system of USSR Gosstab is duplicated in the indicators of departmental supply organs. The problem of the indicator of the wholesale commodity turnover concerns not only long-range planning. It is necessary to establish a uniform procedural approach to its determination.

By the end of the 10th Five-Year Plan the deliveries in accordance with direct long-term economic ties amounted to 45 billion rubles, and their proportion in the wholesale commodity turnover of the statewide supply system exceeds 35 percent. However,

4
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the indicators of the development of this advanced form of supply are being planned and taken into account only by the organs of USSR Gosplan. The task of enlarging the scale and increasing the effectiveness of direct long-term ties, which was outlined by the 25th CPSU Congress and the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, concerns all ministries and departments which are responsible for the supply of the national economy. It should acquire accurate reflection in the corresponding indicators of long-range plans. With the transformation of the five-year plans into the main form of planning and with the inclusion in them of the plans of the distribution of material resources among the main fund holders, the development of direct long-term ties acquires for the first time the appropriate basis in the area of the long-range planning of resources and places on a practicable basis the solution of the question of concluding long-term contracts.

As to the planning of supply as a sector, for this purpose there should be specified in the 10-year plans: the value amounts of the products which are sold with some degree of participation or other of the links of the sector of material and technical supply; the capital investments in the sector, its fixed capital; the amount of reserve commodity stocks in the sector; the number of workers and the national income produced in the sector per worker of it. The enumerated indicators should be specified within the corresponding stages of the long-range goal programs of the improvement of supply, as well as of the drafting and adoption for each decade of a comprehensive program of the improvement of the management of material and technical supply in the country.

The Main Directions of USSR Economic and Social Development for the 10-year period have as a goal, on the one hand, to define more precisely the accomplishment of the socio-economic tasks specified by the CPSU for the long-range future, including in the 20-year comprehensive program of scientific and technical progress. On the other hand, they have the goal to give clear guidelines in the drafting of five-year plans of economic and social development. The indicators and substantiations of the 10-year plans may have alternate solutions of such a major economic and social problem as the development of material and technical supply. The indicated versions will depend on the chosen alternatives, which will govern the demands on supply, and on the means which the national economy will have for meeting them. At the same time the success of this measure will depend not only on the amounts and structure of the material, manpower and financial resources being allocated, but also on the efficiency of the prevailing economic mechanism.

One of the most important features of all the indicators and standards, which are included in the five-year plans, is their address nature. The main indicators of supply as a system of the material supply of production in the five-year plans of economic and social development are presented in the form of material balances with respect to a consolidated products list and of plans of the distribution of resources among the main fund holders. It is envisaged that USSR Gosplan will elaborate for the 11th Five-Year Plan 409 material balances and 331 plans of the distribution of material resources among the main fund holders, which consume 65-85 percent of these products, while USSR Gosplan will elaborate 216 material balances. The indicators and economic standards on supply, which are approved by ministries, associations and enterprises: the volumes of the deliveries of the main types of material resources, which are necessary for the fulfillment of the five-year plan; the assignments on the average decrease of the rates of consumption of the most

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Important types of material resources, should correspond to these material balances and plans of distribution.

With allowance made for these indicators it is expedient to specify the 5-year (with a breakdown by years) assignments for supply organs on the sales volumes of products for filling the orders of customers in the list and assortment, including through direct long-term economic items, on the guaranteed complete supply and on deliveries from warehouses, including in a form ready for consumption in production. These indicators are mandatory for supply and marketing systems, since their goal consists in providing for various groups of consumers the most effective forms of service in the process of the distribution of material resources and the circulation of products. Direct long-term ties are characteristic of large enterprises and production associations with a specialized demand, warehouse deliveries of materials which are ready for production are characteristic of enterprises which are small with respect to production volumes, and so on. The indicators approved for the sector of material and technical supply should cover capital investments and the amounts of construction and installation work, the increase of working capital in the reserve commodity stocks of products, the number of workers engaged in supply, marketing and other production activity, the national income produced in the sector per worker, the profit from basic activity (deliveries of products and the rendering of production services).

All the indicators of material and technical supply in the five-year plans of economic and social development (with the exception of the material balances and the plans of distribution) should be established with a breakdown by supply and marketing systems (USSR Gosplan, the USSR State Committee for the Supply of Production Equipment for Agriculture and others). Here the assignments of the goal programs, the implementation of which is envisaged during the next 5-year period, will be one of the bases of the elaboration and establishment of the indicators. The task of scientific research organizations consists in the procedural backing of the planning estimates, especially for the elaboration of the 5-year material balances and plans of distribution. Apparently, the preparation of the drafts of long-range plans should be organized differently. The main role here should belong to scientific research organizations not only in the development of procedural materials, but also in the elaboration of the indicators and programs themselves. As to the material balances, it is necessary to focus the efforts of scientific organizations on the preparation of a standard base and scientific and technical forecasts.

Let us examine some questions which have a bearing on the long-range planning of material and technical supply as a sector of the national economy. In our opinion, the development of a system of long-range economic standards is one of the decisive conditions of the accomplishment of this task. It should include so-called standards of service (that is, the specific quantities of the amount and quality of work of supply and marketing organizations per unit of output or of the work of the sectors being served), standards of the use of resources (the specific quantities of the consumption of material, manpower and financial resources in material and technical supply) and standards of the efficiency of the activity of material and technical supply organizations. The use for the same purpose of multifactor models of economic growth is no less productive. However, the active use of these tools of planning involves the need to conduct a number of studies and to elaborate fundamental questions which reflect the economic dependences and laws of the development of material and technical supply. First of all the concept of the sector of supply should be formulated and substantiated theoretically. Here at least two questions

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must be borne in mind: the composition of the sector and its place in the unified national economic complex.

Often one has occasion to come across the assertion that the sector of material and technical supply is the organizations and enterprises of the system of USSR Gossnab. Such an assertion is incorrect: first, USSR Gossnab covers only a portion (al-though the bulk) of the operations on material and technical supply; second, such operations as the repair of packaging and the processing of secondary raw materials are also included in the system of USSR Gossnab; third, it is necessary to base oneself on the economic, and not the departmental, attribute.

The concept of the sector as a set of organizations and enterprises, which perform similar economic functions in social production, is used extensively in the planning and accounting of the socialist national economy. Here enterprises and organiza-tions are included within one sector or another on the basis of the main type of activity, and it is customary to call such sectors "established" or "economic." At the same time the concept of "pure" sectors, which are a set not of enterprises and organizations, but of the subdivisions which belong to them and perform economically similar functions or produce specific groups of products, has begun to be used when elaborating intersectorial balances.

Some economists believe that the terms "economic" and "pure" sector also fully per-tain to material and technical supply. Here they assign to the "pure" sector not only supply and marketing enterprises and organizations, but also the subdivisions which are engaged in supply and marketing work at enterprises of industry, construc-tion and other sectors of the national economy. It is impossible to agree with such an interpretation, since it mechanically carries over the conditions of produc-tion proper to the area of commodity circulation and the continuation of the proc-esses of production in circulation. The independent existence of the product of the labor of one production subdivision or another and the real possibility of its compensatory alienation are a necessary prerequisite of the formation of a "pure" sector. Only the independent subdivisions (for example, the shops of enterprises or the units of production associations), the product of the labor of which is suitable for sale (and is actually sold), can be included in "pure" sectors. It is possible to assign to them, for example, the shops for the production of refrig-erators or special machine tools at motor vehicle plants. The activity of the sup-ply and marketing services of industrial, construction, transportation and other enterprises does not meet these conditions. As applied to material and technical supply the concept "pure" sector is devoid of economic meaning. In our opinion, it is necessary to assign to the sector of supply only those enterprises and organ-izations, which are carried on the balance of supply and marketing activity. Here the elaboration and use of precise criteria of the assignment of enterprises and organizations to this group are of paramount importance.

However, what has been said does not mean that the sector of supply should be plan-ned and developed without consideration for the development and improvement of sup-ply and marketing services in production. Systemicity is one of the main prere-quisites of the sound development of the infrastructure of social production. At the same time the specification of the exact boundaries of the sector is a neces-sary condition of its planning.

The question of the place of material and technical supply in social production is no less important. A number of authors have expressed the opinion that the basic

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output of the sector of supply appears in the form of an activity which is consumed at the moment of its performance. "The set of sectors of the production infrastructure... is not directly involved in the production of a product, but creates the necessary material conditions, the prerequisites for social production as a whole. The output of the process of production in its sectors appears in the form of an activity. It is a part of the expenditures at practically all enterprises of the national economy, but it is possible to consume its useful impact only during the process of its production." And further: "An important feature of the sectors of the infrastructure is the coincidence of the consumption of the output with the process of production, as a result of which standby capacities, the proportion of which should be quite high, are vitally necessary for the material and technical base of the infrastructure...."²

Such statements, it seems to us, are a consequence of the improper interpretation of the economic essence of the sector of supply. The majority of the living and embodied labor consumed in this sector (more than three-fourths) is connected not with the performance of services in the classic understanding of this word,³ but with the performance of various warehousing operations on the storage and transfer of products, their resorting, subdivision and the making up of batches, the preparation for use and so on, which are the continuation of the processes of production in circulation. K. Marx noted that the productive nature of such operations simply "is veiled by the form of circulation."⁴

The above-enumerated operations, which determine the place of material and technical supply among the sectors of physical production, cannot be performed at the moment of their consumption, just as they cannot be consumed at the moment of their performance. Moreover, when planning the development of the sector of material and technical supply, it is necessary to direct one's attention to its ever increasing industrialization, to the extensive introduction in it of the technological processes and organizational forms of activity, which are characteristic of mass flow line and large-series production and are conducive to the uniform distribution of the expenditures of labor in time. Here what is meant is a high degree of the typification and standardization of the operations on the preparation by the enterprises and organizations of material and technical supply of standard batches of products. From them the same enterprises and organizations can subsequently form in a short time and with a minimum of costs the batches of deliveries of products, which the consumers need.

Such a situation does not belittle the importance of the activity of supply and marketing organizations and enterprises, which is connected with the performance of the functions of circulation proper (including the replacement of the forms of value). But in the future the increase proportion of the activity on the continuation of the processes of production in circulation will be the decisive factor of

2. V. Zhamin, "The Infrastructure and Its Potentials," MATERIAL'NO-TEKHICHESKOYE SNABZHENIYE, No 11, 1979, pp 7, 11.

3. For example, the work of barbers and hairdressers, bootblacks, nurses who care for children or patients and so on.

4. K. Marx and F. Engels, "Soch." Works, Vol 24, p 155.

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the determination of the place and role of supply in the sectorial structure of the national economy. This circumstance should be taken into account in the long-range planning of the sector of supply. It is necessary to have an idea about the enterprise of the future of this sector from the standpoint of not only its functions and nature of activity, but also its conformity to the proposed (or outlined) tasks of the development of the economic potential. A scientifically sound conception of the sector of material and technical supply is of decisive importance here.

The calculations made of the capital-labor ratio for 1978 (according to the data of the USSR Central Statistical Administration) attest that this indicator in material and technical supply (only for fixed capital for supply and marketing purposes with the exception of the organizations of the State Committee for the Supply of Production Equipment for Agriculture) was equal to industry and was threefold greater than in construction. How should this fact be appraised and how should one orient oneself toward the future? Should the capital-labor ratio in supply be on the level of the achieved ratios or should it go beyond this point? A preliminary analysis shows that the capital-labor ratio in supply under present conditions should be considerably higher than in industry: the calculation of this indicator only with respect to the active part of the capital revealed that in supply it is half as great as in industry. The proportion of difficult manual labor is so high in warehousing services for this reason. The capital-output ratio in supply is about one-fiftieth as great as in industry. Thus, it is necessary to direct one's attention to a substantial increase of the capital-labor ratio in supply. However, here the shift coefficient of the work of supply and marketing enterprises must be increased, which, other things being equal (even with a very high level of saturation of the sector of supply with fixed capital), can lead to a decrease of the indicator of the capital-labor ratio.

The problem of the change of the occupational and skills structure of the workers of supply and marketing enterprises is also closely connected with this question. While broadening the scope of production activity and developing such forms of the material supply of production as the rental of equipment, it is necessary to saturate the sector of supply with well-trained technical personnel and highly skilled specialists of the product quality control services (including of semimanufactures produced by the enterprises themselves).

The development of material and technical supply in conformity with the objective needs of the socialist economy will entail some changes in the national economic proportions. As the sectorial structure of social production improves and the necessary proportions are formed, the sectors producing products will turn over to the sector of supply an ever increasing amount of work on the determination of the demand for goods for production engineering purposes and their sale, that is, the marketing functions. At the same time it is also possible to expect a more intensive "transfer" of some production functions to the sector of supply. The proportion of the sector in the aggregate materials inventory will also inevitably increase. Since the portion of the value of the goods, which can be added as a result of the continuation of the processes of production in circulation, should increase, the amount and proportion of the national income formed in supply and marketing will change accordingly. At the same time certain changes, which are aimed at the increase of the proportion of the output of modern machines, equipment and instruments, equipment for the packaging and wrapping of products for the mechanization and automation of warehousing processes and for ensuring the protection of products

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on their way to the sphere of consumption, should take place in the sectorial structure of industrial production. The expenditures of society on the circulation and storage of the produced output will naturally increase, but the saving of national labor, which is obtained here, will ensure a significant increase of the efficiency of social production.

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REGIONAL DEVELOPMENT

RUTGAYZER REVIEWS SHAMOV'S BOOK ON REGIONAL MANAGEMENT

Moscow VOPROSY EKONOMIKI in Russian No 4, Apr 81 pp 140-143

[Review by V. Rutgayzer of book "Upravleniye proizvodstvom regiona" [Production Management of a Region] by A.A. Shamov. Moscow, "Sovetskaya Rossiya", 1979, 224 pages]

[Text] Many works recently published in our country are devoted to the study of the theory and practice of management of socialist production. And while their authors devote adequate attention to the analysis of the theoretical methodological aspects of management of the national economy, questions of regional production management have as yet been little studied. Those tendencies whose development results in growth of the role of regional factors are examined in the book under review. As a result A. Shamov makes a fully valid conclusion: "The modern system of management and its central element of planning should very clearly perceive the effect of regional factors on the process of production and quite fully reflect this influence in all the basic elements: aims, functions, principles, methods and the like" (pp 6-7).

In the economic literature, the term territorial (regional) management has several meanings reflecting the different understanding of researchers of the given category--it is management of the total aggregate of production operations of different subordination on the territory of a region, management of production of local affiliation, management of processes of utilization of the resources of the territory by sectorial associations and enterprises and so on. In this connection the author notes that "any management cannot but help be territorial, as all human activity has spatial extension and one way or another is based on the employment of the attributes of this space" (p 20). At the same time, it determines the necessity of singling out two aspects in the production management of a region: territorial management in the true sense and regional management.

Territorial management in the book means management work performed on the territory of this or that region in conformity with plans of development of individual sectors or departments--regulation of the use of the territory's resources, creation and operation of facilities of the infrastructure. The importance of selection of such an aspect in the production management of a region is due to the actual practice of management. It is pointed out in the decree of the CPSU Central Committee and the USSR Council of Ministers on improving the economic mechanism (July 1979) that a need exists for improving the development drafts of plans for the development of sectors in a territorial context. In this connection, it is advisable to

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provide a basis for the territorial framework of plans of development of industrial and production associations and other elements of the national economy. The task of selecting the territorial framework of program-goal management is also important. It is likewise possible to speak of the territorial aspect of management of inter-sectorial processes.

Territorial management in the true sense, however, reflects only the sectorial, departmental aspect of production management of a region. At the same time, this production as an integral social-economic organism requires an adequate system of management. A quality of such a system would be regional management which, in the opinion of the author, integrates within the framework of the region necessary elements of both territorial and sectorial management and at the same time does not equal their sum. "Regional management," A. Shamov writes, "may be characterized as national-economic but compressed by the region's framework and by the limitations imposed on it so that the realization of regional interests does not contradict the fulfillment of national-economic interests" (p 21).

For the present, we cannot assert with sufficient certitude that the existent system of production management of a region is fully efficient and effective. Unfortunately, cases are still frequent of departmental narrowness and local favoritism. The book cites quite many examples of this. But what are the directions of regional improvement? The most important of them is called further rationalization of economic regionalization of the country. In disclosing its defects, the author speaks of the need of constructing a multilevel grid of the economic regions of the USSR demonstrably reflecting both the spatial characteristics and the time ranges of the economic and social development of the national economy as a whole and of its individual regional formations. There is proposed in particular a four-level grid of economic regions of the USSR where each of the levels has its levels of preplan-analytical work and its problems relating to this work. The author believes that such a grid makes it possible "in the process of doing preplan-analytical work to go from global, strategic tasks of social-political and social-economic development of the country as a whole to the concrete tasks of comprehensive development of regions at different levels of the national economy and thereby to provide regularity and continuity of planning of economic and social development of the regions according to five-year periods" (p 52).

It is possible to argue about the "number of levels" of economic regions, the degree of their substantiation, taxonomy and the problems relating to preplan-analytical work at each level, but today planning is in process of being reorganized with expansion of its range to 20 years and subsequent breakdown into 10-year and 5-year periods; the need of improving economic regionalization in the approach taken by the author is obvious.

The regional structure of our country's national economy consists of different elements that are unique in their originality. This is to be explained by the historical, social-economic, national, natural and other developmental features of the regions of the USSR. A. Shamov has proposed a classification of national-economic regions. The following types of regions were selected: economic regions; regions with their own form of state system; regions formed in accordance with administrative territorial division of the union republics; regional production complexes. For each of them, basic principles of organization of production management were formulated.

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In our opinion, on examining this classification, a number of questions have to be answered. We consider quite debatable, for example, the assigning of all regions to production complexes. Thus, the economy, let us say, of the North Caucasus economic region, whose territory includes four autonomous republics, two krais and one oblast, cannot be considered a single production complex if, of course, this term is not interpreted too broadly. It would also be hardly correct to call all regions with their own state systems national-production complexes. Consequently, the development of a practicably acceptable classification of the country's regions has still not been completed.

The efficiency of a regional economy is determined first of all by the degree to which it contributes to improving the effectiveness of utilization of the economy as a whole. At the same time, the economy of an individual region has its own internal structure reflecting the objective features of its development. In emphasizing this, the author points out that a territorial economy cannot be adequately effective if the internal proportions of the region's economy do not provide for it a special place in socialized division of labor. Hence the task of regional management is "to find its elements in the chain of sectorial and intersectorial ties entered into at higher levels and to unite on a compact territory all the parts into a production complex, combining the interests of sectors and region" (134).

In the book, Dagestanskaya ASSR is used to show the directions of the solution of this task; there were analyzed in particular the way of improving the economic and organizational mechanism of regional management; questions were examined of management through rational utilization of labor resources, training of management cadres, the establishment on the Caspian coast of a recreational complex and so on. At the same time the author emphasizes that the most important task of boosting the efficiency of the system of regional management is the fuller utilization of regional rights granted them by the USSR Constitution as well as by the constitutions of union and autonomous republics. Its solution creates the basis for attaining the necessary correspondence between sectors and regions, permits the top levels to be relieved from fulfilling functions uncharacteristic of them and provides the opportunity for local management organs to ensure comprehensive economic and social development of a region while taking into consideration the specific conditions of operating an economy on its territory. In our view, such a formulation of the problem is correct inasmuch as many negative aspects of regional management organization occur not because regional organs of management ostensibly do not have sufficient rights but because they do not use them sufficiently fully.

In examining the contents of the reviewed work, we only touched certain debatable points contained in it. It is also necessary to speak of the book's defects.

The author has included in the sphere of his investigation a wide range of questions of regional management, beginning with its theoretical bases and ending, for example, with an analysis of the structure of Dagestan's population or a description of the health-resort zone of the republic's Caspian coast. It is clear from this that the examination of a number of questions required a high degree of thoroughness and substantiation. Thus, A. Shamov writes of the "possibility of creating a kind of coordinating organ for the individual economic region, formed while taking into account the conditions of a truly well-developed regional production complex (p 77). But providing a basis of need for the creation of such an organ is not to be found in the book, nor are its tasks and functions disclosed. while the indication that "this

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organ is bound to play the role of a unique connecting link between sectorial ministries and local organs of regional management" (p 78) actually does not disclose the content of the question.

The same could be said concerning the first two components of the three-part management structure of the regional production complex proposed by the author (p 186). In general the author examines more the organizational element of regional management than planning and the economic mechanism. This to a certain degree leads to the separation of his proposals on improving the organizational structure of management from the entire system of measures for improving the management of regional economy.

Our country's economy represents, as we know, a single national-economic complex, and its management is based on the use of unique methods and forms of socialist management. At the same time, the principles of regional production management require that these methods and forms take into account in their composition the social and economic, natural, national and other developmental features of each republic, oblast, kray and so forth. In the book attention is correctly paid to this principle of organization of regional management of production, but it is not realized everywhere. As a result, some problems of utilization of the economic and organizational mechanism in a region are not shown in the work, while others are elaborated without sufficient consideration being given to regional features. For example, in examining the economic mechanism of regional management, the author speaks of the need of using the "complex tool of the influence of planning on the regional economy" (p 141), but of the regional problems of the economic mechanism, the book elucidates only certain questions of improvement of rent payments and payment for resources.

A number of important aspects of improvement of economic regional management methods remain outside the framework of the study; they include, in particular, the problem of taking into consideration in the sectorial mechanism the special features of location of enterprises and so on. In the analysis of problems of program-goal management, little space is given to regional features of comprehensive programs, and those features of these programs that are singled out in the monograph are characteristic not only of regional but also of sectorial and national-economic programs. In dealing with the cadre problem, the regional aspect is not adequately developed.

A significant defect of the reviewed book is that it almost completely bypasses the question of management of the development of certain social processes. The management of many of them is impossible without an improvement of regional management as a whole. The fact is that the development of production in any region presupposes an adequate level of solution of social problems connected with the satisfaction of workers and members of their families in terms of housing, medical services, education, leisure and recreation. A. Shamov speaks of these questions only in passing.

On the whole, the reviewed monograph is an interesting study that can be recommended to a wide range of readers.

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INTRODUCTION OF NEW TECHNOLOGY

STUDY OF COST-EFFECTIVENESS OF NEW TECHNOLOGY URGED

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Article by A. Borodkin (Kiev): "The Measurement and Calculation of the Cost Accounting Economic Impact of New Technology"

Text The organization of the systems calculation of the economic impact from the introduction of scientific and technical developments will make it possible to combine in a single system the designing, planning and material stimulation of new technology, to increase the analyzability of accounting data and to obtain reliable information on the actual influence of new technology on the results of the activity of associations and their structural links.

The indicators of the fulfillment of the plans of the introduction of new technology, which are reflected in statistical reporting, as a rule, are incomparable with the indicators which characterize the overall financial and economic activity of the association and enterprise. In the Method (Main Statutes) of the Determination of the Cost-Effectiveness of the Use in the National Economy of New Technology and in the instructions on the compiling of reports on forms 2-nt and 10-nt it is stated that the actual expenditures on the introduction of measures on new technology should be determined on the basis of accounting data. However, as in the past, associations and enterprises draw up these reports on the basis of only the projected estimates of the economic impact and sample data. When comparing the totals of the economic impact of new technology according to form 10-nt with the amount of the decrease of the production cost according to form No 6 "Report on the Cost of Commodity Production," discrepancies between them are often found.

The role of accounting, which is called upon to provide with reliable data the course of the fulfillment of the plan of the actual economic impact in individual ministries, the most important directions of scientific and technical progress, as well as for the enterprise, the association and the ministry as a whole, is especially increasing under present management conditions. In the decree of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality" the acceleration of the implementation of scientific and technical discoveries and developments, which are aimed at increasing the growth rate of the productivity of social labor and product quality, is stipulated among the measures on increasing the level of planning. To accomplish the set task, the indicator of the economic impact from the implementation of scientific and technical measures will become firmly established for industrial ministries, associations

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and enterprises starting with the 11th Five-Year Plan in the five-year plans of economic and social development (in the section on the introduction of new technology).

It is expedient, in our opinion, to examine the procedural and organizational prerequisites of the introduction of the systems calculation of the actual economic impact. The urgency of the elaboration of these problems has been noted in the economic literature of recent years. There has been raised, in particular, the question of the creation of an accounting data system (UIS) of scientific and technical progress, which, on the one hand, will become a part of the general subsystem of accounting in the automated control system of the association and, on the other, will provide other subsystems with information. When forming the accounting data system of the development of science and technology in an association of a sector it is necessary to solve a number of questions, in particular, to determine the composition of the problems and their interrelationship with the other subsystems of the automated control system and the content of the output data (the indicators), to select the information support and others.

The following, in our opinion, may be the main ways of creating an accounting data system of the economic impact of new technology:

the inclusion of the cost accounting economic impact of new technology in the object of accounting and in the group of its tasks;

the creation at each association and enterprise of an integrated data system of the accounting of the development of science and technology, which includes the elaboration of a uniform methodology of maintaining the work progress record, statistics and accounting, as well as standardized primary and accounting documentation and intraplant reporting;

the augmentation of the plan of accounts of accounting with new accounts for the reflection of the economic processes of scientific and technical progress and the making of the appropriate changes in the organization of synthetic and analytic accounting and in the structure of the accounting ledgers;

the extensive use of computer equipment for processing data on the calculation of the economic impact;

the assignment of the procedural and organizational management of the calculation of the costs of new technology and its economic impact to the chief accountant of the association.

Only the cost accounting economic impact of new technology can be the object of accounting at the level of associations (production and scientific production) and their structural links. Each association, in implementing the main principle of cost accounting--the comparison of the expenditures with the results--is interested in the introduction of that new technology, which reduces the production costs and improves the end results of cost accounting activity. Therefore the establishment of a causal relationship between the economic impact of new technology and the reduction of the production cost by means of its introduction is of primary importance for the planning and calculation of the actual economic impact, as well as the making of an economic analysis and the compiling of reliable reporting.

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The analysis of the reporting data of production associations shows that quantitatively these indicators never coincide. The size of the difference between them is influenced by many factors, one group of which promotes its increase, while another promotes its decrease. To the first group belong: the allowed unproductive expenditures, the direct overexpenditure on costing items; the differences in accounting by statistical forms (in form 10-nt the saving from operating costs is also taken into account in the saving from the reduction of the production cost due to the new technology; according to form No 6 the actual reduction of the production cost reflects the results of only the main activity, the estimated saving on unfinished measures, with respect to which it is impossible to determine precisely the amount of performed work and the obtained impact, is included in the saving from the reduction of the production cost by means of the introduction of the new technology).

The failure to use assets according to the line items and estimates (for various reasons, including the inclusion of overstated amounts in the planned costings) first of all is assigned to the second group of factors which promote the decrease of the above-noted difference. Moreover, it should be taken into account that the estimated amount of the saving from the reduction of the production cost due to the introduction of new technology, in which the costs connected with the adoption of certain measures or others are not included, is reflected in the statistical reporting. The saving from the reduction of the production cost only due to the introduction of new technology is included in the statistical reporting. Thorough consideration of the stated factors is necessary when compiling the reports and analyzing the obtained economic impact and its interrelationship with the reduction of the production cost.

One of the important questions of the planning, calculation and economic analysis of the cost accounting impact is its measurement on the level of the association and its structural links: production units, branches, shops. The selection of a synthetic, generalizing indicator of the cost accounting economic impact is of great importance. Let us examine this question in more detail.

The economic impact, which is expressed by the increase of the profit, cannot be shown with respect to either the structural subdivisions of the association or the components of the production cost, since in the price for the technology being replaced and the new technology there are no data on the proportionate involvement of the structural links which are engaged in its production or introduction. Consequently, the increase of the profit does not make it possible to establish the influence of new technology on the reduction of the actual production cost during the period under review with respect to the branches and shops. Therefore the indicator of the decrease of the production cost is more acceptable for the measurement of the cost accounting impact.

The production cost, being one of the indicators of the cost accounting activity of associations and their structural links, reflects the level of the utilization of material, manpower and monetary resources. The decrease of the production cost, including as a result of the introduction of new technology, is one of the conditions of the fulfillment of the plan on the profit. In accounting, the expenditures on previously assimilated and newly assimilated products are attributed to the costing items and the economic elements; therefore, on its basis it is possible to determine the decrease of the cost of both all the output and the output which was produced after the introduction of the new technology, and, in addition, to

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identify the cost accounting impact from the introduction of new technology with respect to the structural links of the association. Thus, the decrease of the production cost due to the new technology at the level of the association and the enterprise will function as a component, an analytical element of the general measurer "profit" or "increase of the profit" and will characterize the influence of the new technology on the production costs.

The cost accounting impact with respect to the increase of the profit from the introduction of new technology can be specified in the account "Sales" of accounting. But here the measurement and calculation of the cost accounting impact from the reduction of the production cost (the saving of current expenses) as a result of the introduction of new technology present a number of methodological and organizational difficulties. First of all the organization of the reliable calculation of the changes of the norms of current expenditures, which result from the introduction of new technology, should be arranged. Here not every decrease of the current rates of consumption of material, manpower and monetary outlays should be considered in the end as the cost-effectiveness of production. A revision of the current norms of material and manpower expenditures, which is caused by many factors, is made annually at each association. Therefore, to determine the obtained saving only the changes of the standard expenditures as a result of the introduction of new technology should be taken into account.

The calculation of the changes of the norms under the influence of scientific and technical progress can be carried out by two methods: 1) the actual method--according to the most important items of expenditures (raw materials and materials, purchased semimanufactures and components, the wages of production workers and others) by compiling special notices; 2) the estimate method--on the basis of the technical and economic characteristics before and after the implementation of the measures on new technology with respect to the shop and plant outlays, the outlays on the maintenance and operation of equipment and other combined outlays. In the case of the second method the economic impact from the change of the norms is taken to be equal to the estimated economic impact on the condition of the complete implementation of the measures on all the technical and economic parameters.

At the association and enterprise it is expedient to make the calculation of the economic impact from the introduction of new technology in the following sequence. The planned (estimated) impact for the year and until the end of the year under review with an indication of the costing items, for which a saving will be obtained, is calculated for each measure. Then the estimated economic impact, which is obtained from the implementation of the measure on new technology, is determined on the basis of the data on the actual output of items or the amount of work performed. The actual amount of the economic impact from the implementation of measures is calculated on the basis of the information on the actual current expenditures, which are connected with the implementation of each measure, and for the association as a whole. If it is impossible to establish the estimated economic impact for individual measures due to the lack of data on the changes of the standards of current expenditures or on the output actually produced, the average monthly planned amount of the economic impact is taken into account.

In the standard documents in force on the calculation of the economic impact, its determination for the year is emphasized. However, in order to reflect the influence of scientific and technical progress on the economic results of the work of the

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association and its cost accounting links, first of all on the reduction of the production cost, the absolute actual amount of the impact each month has to be known.

The work progress report on the actual economic impact should be kept on a special card which is started for each measure. It is expedient to indicate on it the code of the measure, the number of the section according to the plan of the development of science and technology, the start and completion of implementation, the number and date of the certificate of implementation. The annual economic impact is calculated on the basis of the planned output of products with an indication of the costing items, for which the obtaining of a saving is anticipated. Here the code of the item and the amount of the impact are recorded. The economic impact is divided into three periods: the accounting period, until the end of the year under review and the month. This is important for planning, as well as for monitoring the receipt of the impact. The monthly planned amount of the economic impact can be used with respect to the individual measures as the actual impact in those instances when it is not possible to calculate the amount of the impact for the performed amount of work or to determine the actual expenditures on the implementation of a measure.

The estimated economic impact by costing items is determined monthly on the basis of the data on the output of products and the change of the current standards. The data on the actual expenditures for each measure at the computer base are taken from the computer printouts. The calculation of the expenditures in analytical accounting should be made with respect to the same items which were taken when calculating the economic impact.

It is necessary to include in the total of the actual expenditures not only the direct expenditures, which were made during the month under review and are connected with the implementation of the corresponding measure, but also the total of the deviations from the norms, which will be established in those instances when a change of the norms is made, while the production resources are consumed in accordance with the old norms. On the card the obtained amount of the economic impact is shown by shops and corresponding items. This will make it possible in the end to make a systems reflection of the actual impact and to link it with the results of the work of the branches and shops of the association.

The data of the work progress report on the expenditures on the implementation of measures on new technology and the actual economic impact at the end of the month are subject to cumulative correlation. The information on the expenditures and the results should be grouped so that it could be used for the reflection of the implementation of the measures on the basis of the importance of their inclusion in the plan, as well as for the compiling of the statistical reports on forms 2-nt and 10-nt. The grouping of all the measures according to the importance of their inclusion in the plan with the assignment to them of the corresponding code is carried out in accordance with the state plan of USSR national economic development, the state plan of the national economic development of the republic and the plan of the association (enterprise). Within each group the measures are broken down into the following directions: the introduction of advanced technology, including the assimilation of technological processes in accordance with purchased licenses; the mechanization of production processes; the automation of production processes; the introduction of computer hardware; measures on the improvement of labor and management; other measures on the introduction of new technology (on the improvement of product quality and others).

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For the measures, with respect to which a systems calculation of the changes of the norms for all costing items is made, the total of the estimated economic impact is calculated by multiplying the difference between the former norm and the newly introduced norm for each item by the actual production volume during the month with allowance made for the change of the balances of unfinished production. The latter includes the produced finished output and the produced parts, the blanks and the performed operations on parts. For the measures, with respect to which the calculation of the changes of the norms is made only in the area of direct expenditures, the estimated impact is determined by multiplying the difference between the former norm and the newly introduced norm for each item by the number and list of the produced products. For the measures, with respect to which it is technically difficult to identify the changes of the standards and the amount of the performed work, the amount of the impact is taken to be equal to the planning estimate of the impact on the condition of the fulfillment of all the parameters.

A report, the entries in which should be made in the chronological order of the implementation of the measures on the basis of the certificates of implementation, the documents on the calculation of the expenditures and so on, should be made monthly for the calculation of the cost accounting economic impact from the implementation of measures on new technology. When using computers it is necessary to record the certificates of implementation, which are received by the accounting office, to bundle them and then turn them over for punching. The established amounts of the estimated economic impact by items and for each measure, the expenditures on implementation by items and measures and the calculation of the amount of the actual economic impact according to the same attributes are mandatory types of input information.

The making of a general calculation of the changes of the norms and the actual economic impact of new technology is impossible without the further improvement of the plan of the accounts of accounting. The system of accounts should be organized so that the workers could group the data according to the actual economic impact of the new technology, the actual expenditures on its introduction and the sources of financing. The plan of the accounts of accounting should be rearranged so that its content would be oriented toward the development of economic data processing equipment and the use in accounting of modern high-speed computers.

For calculating the obtained cost accounting economic impact from the reduction of the production costs it is expedient, in our opinion, in the plan of the accounts of accounting to provide for the following accounts: "Change of the Norms," "The Economic Impact From the Introduction of New Technology." In the first account the total of the changes of the norms with respect to the corresponding items of expenditures should be taken into account; in the second in the balancing with the debit of the account "Change of the Norms" it is recommended to take into account the total of the estimated economic impact in accordance with the certificates on the introduction of new technology, rationalization proposals and other measures. The amounts of the changes of the norms, which are ascertained according to the notices on the change of the norms, as well as by means of estimates, should be entered with respect to the account "Change of the Norms" in the balancing with the account "The Costs of Basic Production According to the Norms."

Such a balancing of accounts is necessary in order to reflect the equality of the totals according to the debit and credit of the mentioned account. Here the actual expenditures on the output of products according to the changed norms, which in the

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total with the identified changes will be equal to the standard cost of the output produced, which is reflected according to the credit of the account "The Costs of Basic Production According to the Norms," will be reflected with respect to the debit of the account. The introduction of the indicated accounts will make it possible to reflect in the system of accounts the influence of the introduction of new technology on the reduction of the production cost and to identify the results of this influence on the increase of production efficiency.

In connection with the introduction of the systems calculation of the expenditures on the introduction of new technology and the actual economic impact the current journal entry form of accounting should be augmented by three summaries: "Expenditures on the Introduction of New Technology," "Expenditures on Scientific Research, Experimental, Planning and Design Operations," "The Cost Accounting Economic Impact of New Technology." In the first it is necessary to take into account the expenditures on the implementation of measures on new technology and the sources of their financing; in the second--the expenditures on scientific research, experimental, planning and design operations according to the same parameters as in the first; in the third--the actual cost accounting economic impact from the measures on new technology.

The obtaining of information for compiling the statistical reports on forms 2-nt and 10-nt, in which it is expedient to stipulate such an indicator as the actual economic impact, which is determined according to the most important directions of scientific and technical progress, becomes possible on the basis of the developed system of accounts and the organization of analytical accounting. All this will make it possible to provide an objective assessment of the effectiveness of the measures being implemented.

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