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A Complex Analysis on Estimating the Technical and Qualitative Standards of Industrial Products

A special part within the measures for the implementation of the Party's decisions on ensuring Romania's multilateral socio-economic progress is played by the improvement of the technical and qualitative standards of production and of industrial products.

By the approval of the "Programme on improving the technical and qualitative standards of products, on cutting down raw materials, fuel and energy consumptions and on turning to best account raw and related materials in the 1983—1985 period and up to 1990", the ways and means have been mapped out for the achievement of a complex system of ensuring quality which should involve both research, concept and design, the technological processes of products and the introduction of modern methods of economic and technical analysis of quality for bringing and maintaining it at a high world standard.

The documents of the Thirteenth Congress of the Romanian Communist Party show that "in 1990 we will attain a general standard of the Romanian industrial production, as well as a quality and technology of this branch comparable with that in economically developed countries".[1]

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It is common fact that in each industrial branch the general improvement of the technical and qualitative standards and reliability of products is attained or maintained through an irreproachable execution in keeping with

1) Resolution of the Thirteenth Congress of the Romanian Communist Party, Scinteia, November 25, 1984.

the designs or technical reference books, the redesigning and modernization of products in current internal fabrication, the improvement of the constructive and functional concept of the assimilated products, the improvement of the structure of assortments by extending the manufacturing of high-tech products.

Likewise, it is admitted that the quality indices through which the technical and qualitative standard of products is expressed are integral part and hold a major place in the system of efficiency indices of productive activity.

In industry the technical and qualitative standard of products is expressed in a complex and at the same time in an extremely varied way in keeping with both the specific character of each branch and the nature of the finished product and with the field of their use (classical fields, aeronautics, nuclear energetics, etc.).

Generally speaking, in the industrial branches in which complex products are turned out from the technical and technological points of view, the respective products cannot be divided on quality classes (the consideration: the need of ensuring the protection and labour safety of the working staff and of ensuring the continuity of production processes).

At the same time, however, in a number of industrial branches (the extractive industry, metallurgy, chemistry, building materials, textile, household, articles, etc.) in which products can be classified according to quality (classes or quality assortments), that is the same homogeneous production obtained out of the same production process can be divided into products of certain quality in keeping with qualitative differentiations as compared to the highest standard of quality.

Regardless of the industrial branch or product obtained, a unitary and complex system of levers, parameters and norms has been stabilized at present which can attest to the standard of each industrial branch — the technical and qualitative level of products (State Standards, Internal Norm, Department Norm, contract stipulated directions, etc.)

At the same time, quality deviations — non quality — can be classified for certain results of industrial activity into: final scrap, partial scrap, declassed production, products claimed by beneficiaries as inadequate, etc.

In recent years, to estimate the technical and qualitative standards of products, an additional pointer has been introduced into economic practice, namely: "The value of new and redesigned products in the total value of commodity output" with a detail "The weight of the value of the newly redesigned products based on Romanian concept in the total value of the new and redesigned production in a certain industrial branch".

At present and in the future — 1990 — by approval by the Grand National Assembly of the Socialist Republic of Romania of "the Programme on improving the technical and qualitative standards of products" the existing complex system of estimating the technical and qualitative standards of products will no longer satisfy the exigences of the new stage of socio-economic development of the country.

Considerations in support of this affirmation:

1. The technical and qualitative standards of products classified on quality classes is estimated — at an industrial group and ministry level — in value and not in physical expression.

2. The afore-mentioned index "the value of new and redesigned products" is calculated and estimated in value expression as well, and the comparison term for "new and redesigned products" is a certain domestic product or production.

This means that by "redesign" a certain higher standard is not attained but only an existing level is surpassed.

3. The level of certain State Standards, Internal Norms, etc. establishing the dimension of the technical and qualitative standards of products is situated in the case of industrial products below the level of similar normative acts in certain economically developed countries.

4. Certain specific indices or quality classes for various industrial products do not rise up the level of quality directions of certain professional organizations of industrial producers — on an external plane — which in order to ensure in due time and for a long period an ever wider and constant area of beneficiaries have raised quality existence on the extremely high levels. (See: Woolmark — a quality trade-mark for textiles, the NEBRASKA tests for tractors, the Danish Naval Register, the British Air Register, the HI-FI electronic components etc.).

In these conditions, that is along with the reconsideration of the PHYSICAL PRODUCTION pointer in the set of economic efficiency indices and with the approval of the Programme on technical and quality upgrading of products (inclusively its inclusion into the documents of the Thirteenth Congress of the Romanian Communist Party), technical standard and quality will have to be estimated (by taking into account the material and financial effort for the intensive development of industry, on the one hand and the need of enhancing the competitiveness of products on foreign markets, on the other hand, as well as the expansion of the export of highly processed and efficient Romanian products) in keeping with:

A. The share of high world qualitative standard products in the total physical production obtained.

This pointer has got a standardized expression, rated for the years 1985, 1987 and 1990 at the level of national industry with layouts on industrial branches: machine-building, electrotechnical and electronic, chemical, metallurgical, building materials, wood working, light, food and mining industries.

This index has got as a calculus basis the list of industrial products in current manufacture of each calendar year in a certain industrial branch.

At an industrial group and factory level, the index must be observed in keeping with the provisions of the respective programmes on improving the technical standards and quality of products in current fabrication.

Considering the large number of products included into the list of world technical and qualitative standard products, a data base should be designed which should include this list along with the manufacturing technologies, production costs, physical production etc. (Fig. 1).

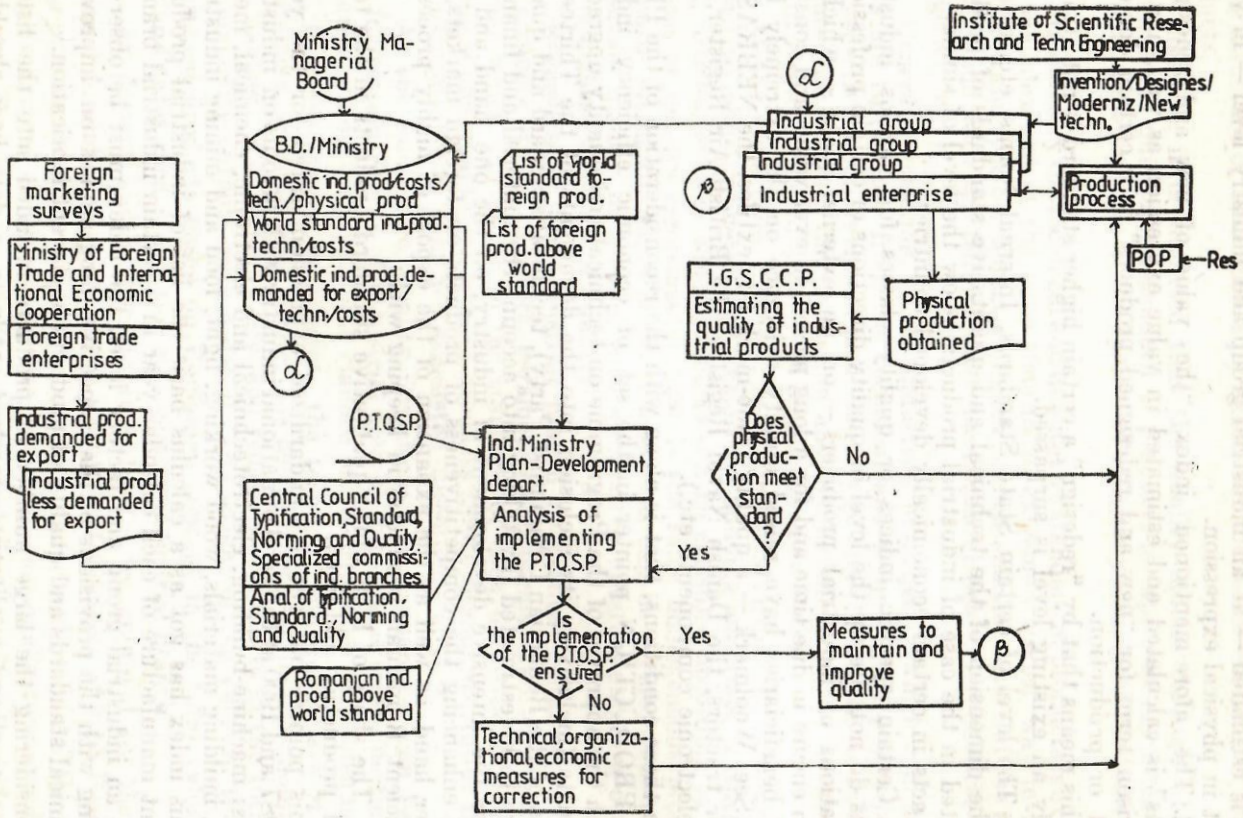

Ministry Managerial Board
B.D./Ministry
Domestic ind. prod/costs/ tech./physical prod
World standard ind.prod. techn./costs
Domestic ind. prod. demanded for export/ techn./costs
Foreign marketing surveys
Ministry of Foreign Trade and International Economic Cooperation
Foreign trade enterprises
Industrial prod. demanded for export
Industrial prod. less demanded for export
P.T.Q.S.P.
Central Council of Typification, Standard, Norming and Quality
Specialized commissions of ind. branches
Anal. of typification, Standard., Norming and Quality
Romanian ind. prod. above world standard
List of world standard foreign prod.
List of foreign prod. above world standard
Ind. Ministry Plan-Development depart.
Analysis of implementing the P.T.Q.S.P.
Is the implementation of the P.T.Q.S.P. ensured?
Yes
No
Technical, organizational, economic measures for correction
Measures to maintain and improve quality
Does physical production meet standard?
No
Yes
I.G.S.C.C.P.
Estimating the quality of industrial products
Physical production obtained
Institute of Scientific Research and Techn. Engineering
Invention/Designes/ Moderniz./New techn.
Industrial group
Industrial group
Industrial group
Industrial enterprise
Production process
POP
Res

Fig. 1

B. The share of industrial products of technical and qualitative standard above world level in the total physical production obtained.

This pointer presents a standardized expression starting with 1989—1990, at the level of national industry. We consider this index should be observed both at the level of various organizational structures of industry and at that of the National Council of Science and Technology, respectively at the level of scientific research and technological engineering, in each industrial branch.

We consider the major problem is mainly the way in which these world achievements are recorded and the data base is constantly updated.

Figure 1 presents the diagram of a system concerning the complex analysis of the technical standards and quality of products in a certain industrial branch.

The complex analysis on estimating the technical standards and quality of industrial products implies the consideration more than so far of foreign marketing surveys conducted by foreign trade enterprises — the Romanian agencies abroad — aimed at knowing precisely the products demanded for export, the characteristics of the foreign market on which we are going to sell Romanian industrial products.

Likewise the achievement of world standard industrial products impels to obtain them in the conditions envisaged by the Central Council of Typification, Standardization, Norming and Quality setting through specialized commissions on industrial branches.

The improvement of the technical and qualitative standards of products will be conducive to a substantial increase in turning raw materials to good account, to cutting down material spendings, to raising economic efficiency and competitiveness of the Romanian products on world markets.