

## INDUSTRIAL CAPACITIES OPTIMIZATION AS A BASIS FOR INDUSTRIAL COOPERATION

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This article shows the process of industrial cooperation based on the assessment of industrial capacities and their optimization.

In the process of industrial cooperation it's necessary to take into account a level of concentration of industrially homogeneous products, which can be expressed by a degree of correspondence of production scale to economically reasonable (optimal or minimum acceptable) size. Planning of specialization of industrial cooperation is not a goal in itself but a tool for an enterprise economic efficiency increase basing on technical progress.

Moreover, it's necessary to take into account the degree of industrial cooperation and concentration of homogeneous production, as well as its organizational and technical level that should be considered together. This is the reason why, in practice, there are contrary cases when the selected stage of organizational and technical level does not correspond to a large production. In such a case they use machinery and technology characteristic for lower stages of organizational and technical level, for example large-scale production is created and developed on the basis of machinery and technology corresponding to mid-scale and small-scale production. However, it should not be confused with industrial cooperation implemented by means of elimination of redundant production at several engine manufacturing enterprises.

Let's consider in general the requirements to industrial cooperation criteria.

In engine manufacturing it's necessary to create such conditions, to which new machinery and progressive technologies correspond to with the forms of specialization providing for complete equipment engagement and the best technical and economical parameters of production. We should keep in mind that the same item can be manufactured at enterprises with certain specialization according to a list of finished products or at a set of enterprises specialized in assembly units, parts or stages of production process. The most progressive and effective is the second direc-

tion. The higher is the degree of industrial community, the more factors for creation of the most effective production are. The degree of industrial community is increased in the course of development of standardization, normalization, unification and on their basis - method of aggregation in the process of engine designing and manufacturing.

As it is known, creation and development of production relations requires also some additional investments, which should return in short time as a result of saving current expenditures per production unit. Therefore, it's necessary to know the product cost manufactured by specialized production and estimated cost for enterprises working in the chain of industrial cooperation.

Thus, industrial cooperation parameters must provide an opportunity to solve the following issues. Thus, it is necessary to find out:

1. If identification is possible in case of specialization in the range of finished engines, and there are possibilities for its increase at the operational specialized enterprises.

2. If it reasonable to continue manufacturing several types of engines of one or various classification groups at the same enterprise, in case there are conditions for creation of industrial cooperation of enterprises in manufacturing some of these engines.

3. If there are conditions for allotment of assembly units and parts for specialized production engaged in a chain of industrial cooperation.

4. The list of finished products, assembly units and parts, which require study of possibilities for reduction of number of items down to economically reasonable by means of unification and standardization.

5. The form of specialization and cooperation that should be selected for organization of new items production (for a group of enter-

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prises specialized in parts and stages of technological process).

6. If there is an objective possibility and economical reason for the usage of progressive technological processes by this or that enterprise.

7. If the amount of additional investments necessary for creation of new or development of existing specialized productions is identified.

8. The economic effectiveness of industrial cooperation (payback time of additional investments, economic effect of difference of reduced costs).

Structure and economic nature of parameters of reasonable size of industrial cooperation must reflect optimal and minimum acceptable size of production which allows finding solution for issues necessary for planning concentration and specialization in industrial cooperation.

A dynamic model of the engine market (both domestic and foreign) future development must be the basis for concentration and specialization planning. The optimal capacity of enterprises participating in industrial cooperation is determined basing on this and is not a mechanical sum of manufacturing capacities of member entities. The identification of optimal capacities should also base on the forecast of development of industries consuming these products taking into account progress in machinery, technology, arrangement and location of their facilities. Thus, the domestic and foreign market demanded for this or that engineering product for the planned period is the basis for industrial cooperation development planning as judged by determination of optimal industrial capacities.

It's necessary to introduce the development of optimal capacities both into new manufacturing relations and the existing productions intended for industrial cooperation.

Alteration of existing enterprise capacities to the project level, i.e. optimal size, is the

most important condition for increase of engine production effectiveness. Moreover, determination of economically reasonable size of production is necessary for the following objectives:

- ◆ long-term planning of industrial cooperation and creation of a general scheme for development of industrial cooperation for a long period;

- ◆ identification of specific directions and forms of development of industrial cooperation;

- ◆ optimization of operating enterprises scale of production in the course of their technical upgrading, widening and reconstruction.

Keeping in mind that the capacity optimal size is identified with account for special conditions limiting possibility for capacity increase we shall note that the optimal size does not mean the largest. Finding an optimal capacity means selection of the most economic variant of demand satisfaction with manufacture of this or that product for the planned period. In this relation it's necessary to remember that optimal capacity being a function of many factors is variable in time. It depends on design sophistication of products, on machinery efficiency, on technology, labor and production organization and other factors reflecting achievements of scientific and technical progress.

Though taking into account development tendencies of various types of machinery, pace of industrial assimilation of new machinery, devices and engineering materials influencing the value of specific reduced cost elements it's necessary, in our opinion, to reconsider the size of optimal and minimum acceptable capacities in the conditions of industrial cooperation in line with the need set by changes at the engine market to harmonize them with new achievements of scientific and technical progress.

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