STRUCTURE OF PREPRODUCTION AS A SPHERE OF ENTERPRISE INNOVATION

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Keywords: development, maintenance, logistics, manufacture, research works, experimental development, technological preproduction, company ideology, consulting, pilot production.

The necessity of logistical maintenance of innovative activity of the enterprise proved in article; the basic stages of preparation of manufacture (preproduction), including consulting, company ideology, pilot production; variants of preparation of manufacture offered in depending on requirements of the market and its evolution.

Basis of successful functioning of an industrial enterprise is preproduction. Subject-matter and content of preproduction in the market conditions can fluctuate depending on environmental factors of an industrial enterprise.

The basic concern of this work deals with content specification of the preproduction in the market conditions.

First of all it is necessary to distinguish functional fields of production, which is detected [4] as "a public process of material goods creation, covering society productive forces and human production relations".

This challenge can be solved by introducing of two classifying characteristics:

♦ descriptive measure of manufactured resources (changing or not changing);

♦ function type, which is carried out by an enterprise departments (primary or alternate) (picture 1).

introduction of logistics into practice of enterprise enables obtaining of significant benefits by end-to-end control of material, informational and financial resources. When we say logistics we mean not only a set of basic logistical functions (transportation, resource storage and stocks formation) (functional aspect of logistics), but the resource flows control science (management aspect of logistics).

Aforementioned material allows us to say that every enterprise - industrial or commercial should emphasize two basic subsystems - technological and logistical. As we can see from practice [2], "in total time spent for, stocking, manufactureing operations and delivery, it takes for production itself only 2-5% average of all time... Hereby, more than 95% of turnover time is spent for the logistical operations. Reduction of this component can force the assets turnover and increase profit rate for the time period, reduce

Function type, which is carried out by an enterprise departments	Descriptive measure of manufactured resources: Changing	Descriptive measure of manufactured resources: Not changing
Primary	Primary manufacture	Logistical maintenance
Alternate	Alternate manufacture	Service maintenance (service sector)

Fig. 1. **Functional fields of production**

Picture 1 shows that, except traditionally used in the native literature, functional fields of production (primary manufacture, alternate manufacture, service sector) we emphasize logistical maintenance as another functional field of production.

It is obvious that introducing the logistical maintenance as an independent functional field of production is very reasonable, because in-

production cost value". Technological subsystem shows specialization of an enterprise, logistical subsystem shows type of logistical system, which is either used by the enterprise or this enterprise is an element of the system.

Special position in the system of manufacturing management takes preproduction. Specialists say that fundamental stages of preproduction are:

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♦ research works (here and after - NIR);

♦ experimental development (here and after - OKR);

♦ technological preproduction (here and after - TPP).

Sometimes they use organizational manufacture staging as a component of preproduction.

Analysis that we conducted shows that we can distinguish five fundamental stages of preproduction. (Pictures 2 and 3).

Data analysis from picture 4 shows basic varieties of preproduction for enterprises with different types of requirements, they are:

1) 2.2 - 2.1 - 1.2 - 1.1;
2) 2.2 - 2.1 - 1.1;
3) 2.2 - 1.2 - 1.1;
4) 2.2 → 2.1 / 1.2 → 1.1;
5) 2.1 - 1.1;
6) 1.2 - 1.1.

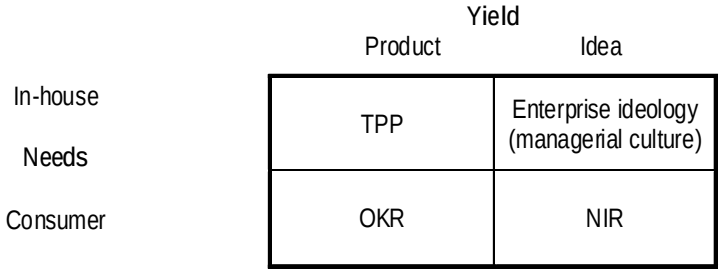

Fig. 2. **Fundamental stages of preproduction (edition 1)**

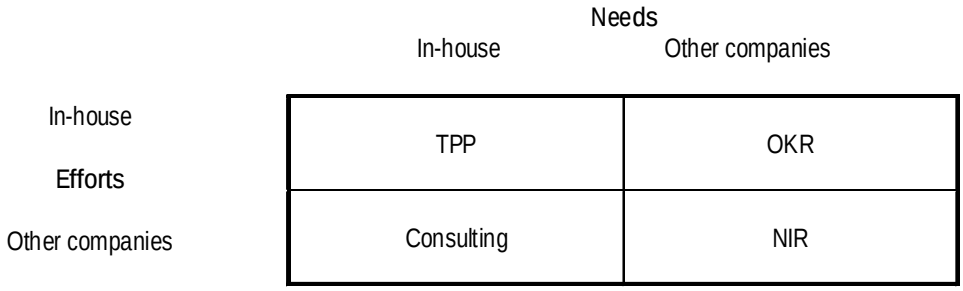

Fig. 3. **Fundamental stages of preproduction (edition 2)**

According to the pictures 2 and 3 there are number of the stages of preproduction:

♦ research works;

♦ experimental development;

♦ technological preproduction;

♦ company ideology (managerial culture);

♦ consulting.

Last two stages we can unite into separate one, called organizational manufacture.

Also we can distinguish one more stage, more or less incoming to the process of preproduction (picture 4) - pilot production.

It seems obvious that different features of preproduction are determined by the enterprise strategy, which can be determined as top-company or chaser-company. Enterprise strategies possible are shown on picture 5.

We can specify basic features of preproduction for different enterprises according to their demands. To do that we are using fundamental stages of preproduction - NIR, OKR, TPP and we put 1 if we use the stage and 0 if not. The analysis results are shown on table 1.

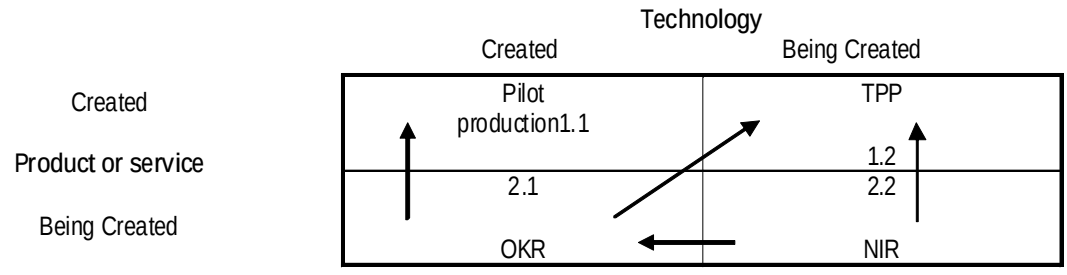

Fig. 4. **Implementation Content and sequence of preproduction fundamental stages**

Enterprise type	Product	Yield Technology	Product + Technology
Chaser-company	Patent purchase	Know-how purchase	License purchase
Top-company	OKR	TPP	NIR

Fig. 5. **Alternative enterprise strategies based on the strategy chosen**

Basic features of preproduction for different enterprises according to their demands

NIR	OKR	TPP	Situation characteristics
0	0	0	Stability
0	1	0	Modernization
0	0	1	Manufacture expenses retrenchment
0	1	1	Reconstruction
1	0	0	Venture business
1	1	0	Product refreshment (service)
1	0	1	Technology renewal
1	1	1	Development

According to the table 1 data preproduction of an industrial enterprise spreads to the sphere of primary manufacture as well as to the sphere of logistical maintenance.

On this basis there are different varieties of basic features of preproduction for the spheres (Picture 6).

Industrial enterprise development process provides realization of stage sequence, for example those, shown on the table 1. We should use scheme, shown on picture 7 to define simple correlation of the stages.

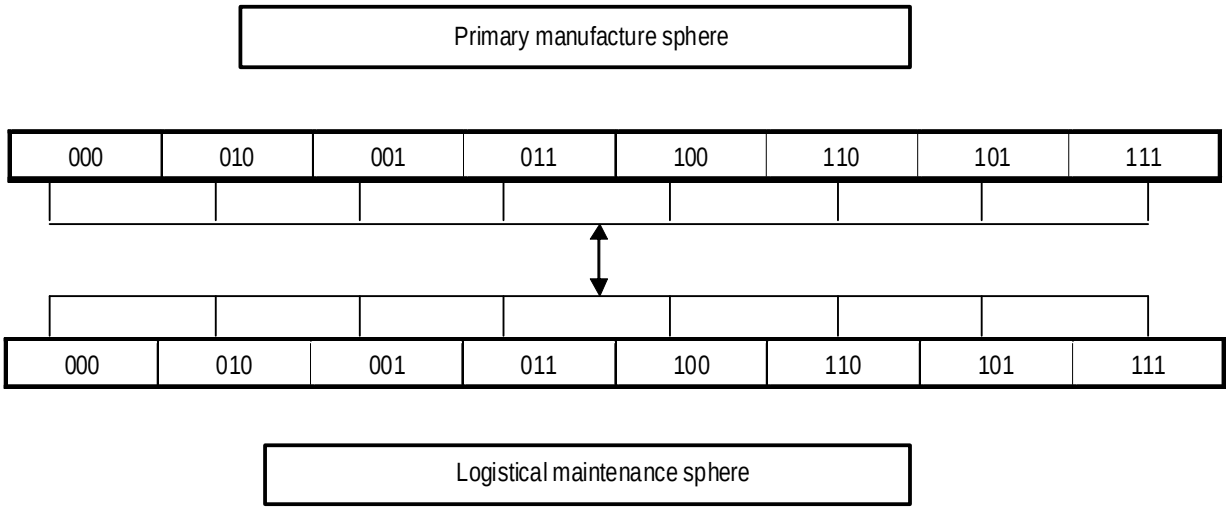

Fig. 6. **Combination of basic features of preproduction for the spheres of primary manufacture and logistical maintenance**

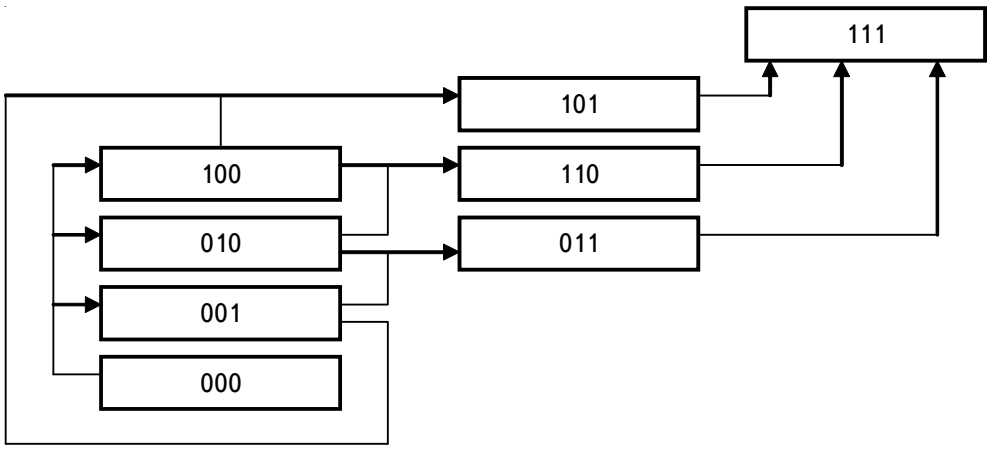

Fig. 7. **Stage sequence of development processes on the enterprise**

Given scheme allows us to monitor consistent pattern of process development in time period as well as to observe its particular degradation as far as it is very important for the enterprise renewal and development.

Hereby, toil complex we made gives us a basis for the correction of set of traditional theories of manufacture and innovational management - scientific trends, directly tied with enterprise market activity and correspondingly with the process of qualitative satisfaction of wants of person as well as a company with a minimum expenses.

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[3] *Gerasimov V. V.* Development management of manufacturing systems / V.V. Gerasimov, L.S. Mishina, O.S. Grigoryev: study guide / Edition. Novosibirsk, 2002. 228 p.

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