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The Analysis of the Foreign Experience of the Aircraft Engineering Enterprises Transformation

The experience of adaptation of the leading manufacturers of the world aircraft engineering market to the changing market conditions considered. A set of actions and measures for the transformation of certain potential types of aircraft engineering manufacturers determined.

The results of studies of the potential of the aviation industry enterprises indicate a possible increase in the volume of development and production of aviation equipment, in particular, in such areas as aircraft building (regional passenger and transport aircrafts), aircraft engine building, aviation assembly, avionics focused on the use of satellite communication systems, navigation and surveillance, ultralight and light aircrafts [1].

At the enterprises of the domestic aircraft engineering, very often various adaptation transformations are not sufficiently correlated with market changes – both domestic and global, due to the fact that they are either insufficient or excessive and most often – simply not integrated. As a result, there are significant violations in the fulfillment of obligations to customers, as well as deterioration of the state and the results of production and economic activities. It is obvious that only with correctly synthesized in scientific terms (conceptually and implementation) mechanism of transformation management high-quality management of the aircraft engineering enterprises can be achieved.

Changing the potential of the aircraft engineering enterprise in order to influence the level of competitiveness of products and, as a consequence, of the enterprise, is a way of integrated system management of the entire set of potentials that can make up the competitive advantages of the enterprise within the industry.

There are a large number of examples of the implementation of some types of transformations in the practice of industrial enterprises. We will consider the experience of adapting the world's leading aircraft manufacturers to changing market conditions. The actions and measures to transform certain types of the potential of the aircraft engineering enterprise are the following.

1. Improving the quality of products and services to ensure product compliance with the requirements of consumers on the target market: certification of products and production in accordance with Ukrainian and international standards; implementation of a quality management system according to ISO, DSTU (State Standard of Ukraine); evaluation of customer satisfaction with product quality; implementation of quality improvement programs.

2. Improving the effectiveness of marketing and sales strategy (following the concept of “marketing-oriented company”): organization of marketing and sales

units; marketing research; identification and analysis of consumer requirements; implementation of competitive strategies; implementation of powerful promotion campaigns; implementation of loyalty programs; simultaneous implementation of the largest number of sales campaigns; flexibility of commercial offers, etc.). The components of this parameter are:

- marketing: organization of marketing activities management; marketing research; marketing planning (development of strategic and operational marketing plans) and budgeting; branding and product promotion (through global presence in the market, identification of major brands, demonstration of competitive/consumer advantages and key competencies: participation in exhibitions, conferences, trade associations, advertising and PR, sponsorship, website, documentation, etc.). The use of Continuous Acquisition and Life-Cycle Support technologies enables end-to-end tracking of the product lifecycle and its optimization at the stage of marketing research and preliminary design of new products [2]. Creation of a high-quality website of the aircraft engineering enterprise to achieve operational interaction with each customer is an interactive way to optimize the overall strategy of maintenance and repair of aircraft. For example, on the official website of General Electric Aviation, there is a virtual calculator of the airline's need for aircraft engines during the repair of regular ones. Thus, on the official website of the CFM56 aircraft engine, authorized users are provided with: detailed information about the design of the engine; electronic parts catalog; interactive electronic technical manual; maintenance and repair bulletins, etc.;

- supply support: support of sales campaigns (development of presentations for a specific potential customer, complex technical and commercial calculations, general and special guarantees, maintenance costs), preparation of commercial offers for potential customers, etc.;

- sales: creation of a network of sales centers in the regions of the world, the entry of sales representatives in various public/trade organizations in the territory of potential customers, establishing relations with potential customers, sales campaigns, commercial offers handover, signing the contracts for the supply of products;

- application of marketing techniques in the aircraft markets. For example, fearing a ban on flights to Europe of Boeing-747 the manufacturing company sold several copies of the new aircraft to French and British carriers as a priority – before selling to American airlines;

- contract work: preparation of contracts for the supply of products, sales and commodity management, management of mutual settlements with customers (receipt of funds);

- after-sales service: the creation of a global system of scientific and production associations, customer support, claim work, customer training for features and use of products. For example, the introduction of customer relationship management programs, CRM [3];

- offset programs: the creation of a unit for the implementation of offset deals;

- integrated product support programs (Lufthansa – Total Base Maintenance Support; Rolls-Royce – TotalCare Services; Boeing – GoldCare Services; BAE Systems – Total Support Package; General Electric – OnPoint Solution

Services; Safran Aircraft Engines – Engine Line Operation Support and Engine Maintenance on Site) [4].

3. Transformation of production and technology, design and testing facilities. Development (including modernization) of production-technology and testing facilities aimed at improving the quality of products (including the exclusion of the “human factor” at the critical stages of the technological process) and the development of new technologies/new competencies. Currently, the production and technology base of most domestic enterprises is significantly inferior to the world level. This evinced in low productivity and low quality of products/services.

4. Development of the product range and development of new aircraft technologies (the scale of the company’s product offer on the market; implementation of scientific research programs aimed at the modernization of serial products and the development of new models). Currently, the world leaders in the aircraft industry are implementing such basic programs for the development of new technologies: programs for the creation/improvement of gas generators of turbojet engines; programs for the creation/improvement of low-pressure cascade modules of turbojet engines; programs for the development of prospective schemes of aircraft engines.

5. Creation of research consortiums. For example, General Electric Company formed The Aeroacoustics Research Consortium in order to develop advanced technologies to reduce aircraft engine noise.

6. Manufacture of a number of special stands for debugging and certification works of bench testing of gas-dynamic parameters and debugging works on gas generators and full-size engines is an example of a high-quality adaptation of production and technological potential of “Motor Sich” JSC.

7. Improvement of staff and management skills (implementation of training, retraining and advanced training programs).

8. Implementation of cost optimization programs. Cost optimization should not complicate the processes of improving product quality, development of new technologies, promotion of products to the market, ensuring prompt response to customer needs. The main directions of implementation of programs for optimization (reduction) of costs are: cost reduction (reduction of costs for goods and materials, optimization of the number of personnel, reduction of overhead costs, etc.); minimization of losses (reduction of number of defects, implementation of innovations, reduction of the production cycle); labor productivity increase (reduction of working time losses, introduction of new technologies); outsourcing of services, etc.

9. The organization of a specialized Advisory Board consisting of representatives of potential customers, due to the possibility of obtaining both options and firm orders. For example, General Electric Company created the Advisory Board.

10. Financing of sales/customer: organization of work on determining the customer’s financing schemes in the organization (cooperation with private and public financial institutions, the attraction of export credit schemes, state guarantees, etc.).

11. Lobbying of the programs implemented by the enterprise at the state level (entering the programs of the enterprise into the state target programs; assistance of the state in the promotion of products to the closed markets). World experience in the implementation of programs for the creation of advanced aviation

equipment shows the need for state support. At the stages of development and certification, deployment of mass production, overcoming the imperfections of the legislation, promotion of products to “difficult” markets, etc. the state support is often a key and determining factor in the success of the program. In particular, from the point of view of product promotion, state support is necessary in solving the problems of promotion to the markets of foreign countries (USA, China, India, etc.) and regions (Latin America, South-East Asia), in which there are political and other barriers to entry of new suppliers to foreign markets.

12. Implementation of international cooperation programs (cooperation with companies – leaders of the world aircraft industry in order to implement programs for the development of advanced aviation equipment, which is in demand in the world market). The experience of Safran Aircraft Engines and MTU Aero Engines shows the importance (for the strategic development of the company) of participation in various international programs, as well as the development of cooperation with the leaders of the global market of aircraft manufacturers. Despite the secondary role of a small company, relatively small revenue figures, during the implementation of such programs, the company forms its own positive reputation in the global aircraft market, acquires advanced experience in the development and production of components of modern aircraft, etc. Participation in such programs can provide significant assistance to domestic companies in the formation of the necessary competencies, financial and technological capabilities for the implementation of their own adaptation programs.

The application of foreign experience to the peculiarities of management in modern Ukrainian conditions, which differ from the conditions prevailing in other industrialized countries in terms of risk, availability of resources, depth of non-competitiveness, etc., is fundamentally difficult. In addition, foreign management technologies are extremely expensive; the acquisition of them can lead to loss of financial solvency of the enterprise.

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