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ADVISABILITY OF APPLYING THE COMPUTER-AIDED DESIGN SYSTEM FUSION 360 IN ENGINEERING PRACTICE

Zh.T. Zhlali, student
Kyiv National University of Technologies and Design
M.M. Rubanka, Candidate of Sciences in Engineering, associate professor
Kyiv National University of Technologies and Design
V.M. Dvorzhak, Candidate of Sciences in Engineering, associate professor
Kyiv National University of Technologies and Design

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In today's conditions, it is almost impossible to imagine a modern competitive machine-building enterprise that is not introduced to innovative technologies in the context of the fourth industrial revolution, so-called Industry 4.0. A priori, the enterprise will not be able to develop and have access to the international market without modernizing the park of technological equipment, its full or partial replacement, modernization, automation, computerization, robotization, etc.; without the introduction of modern automated design systems (CAD), including CAD/CAM/CAE technologies into the manufacturing process of products [1].

It is quite difficult to make a rational choice of a software product that successfully combines CAD/CAM/CAE technologies, fully uses powerful functionality to meet the needs of a potential user, and at the same time not overpay. It is quite clear that CAD developers position their product as the best "price-quality" choice. At the same time, they try to periodically expand the functionality of their software product, introduce innovative approaches, create new (unique) modules adapted to a specific industry, increase the existing libraries of standard and typical parts, develop a new, unusual design, etc.

The employees of an enterprise (head of the project office, technologist, head of the design office) should first of all clearly understand for what purposes CAD is implemented in their production, which functional potential will be used and which is relevant to be used, calculate the economic effect, take into account the specifics of use, adaptability and capacity to solve potential design problems - technological tasks [2]. Only such an economic approach will make it possible to make a rational choice of CAD for a specific enterprise with completely predictable results.

SolidWorks, CATIA, Creo, TopSolid and Fusion 360 all remain the most popular CAD software that can be found at today's most powerful machine-building enterprises [3]. Each of the listed CAD systems stands out among competitors both with its undeniable advantages and inherent disadvantages.

Specialists who will use Fusion 360 in their engineering practice will have the opportunity to engage in 3D modeling, generative design, calculation of structure loads, creation of structure movement animations, etc. in one global cloud environment.

The main functions of the Fusion 360 computer-aided design system are presented in the figure 1 [4].

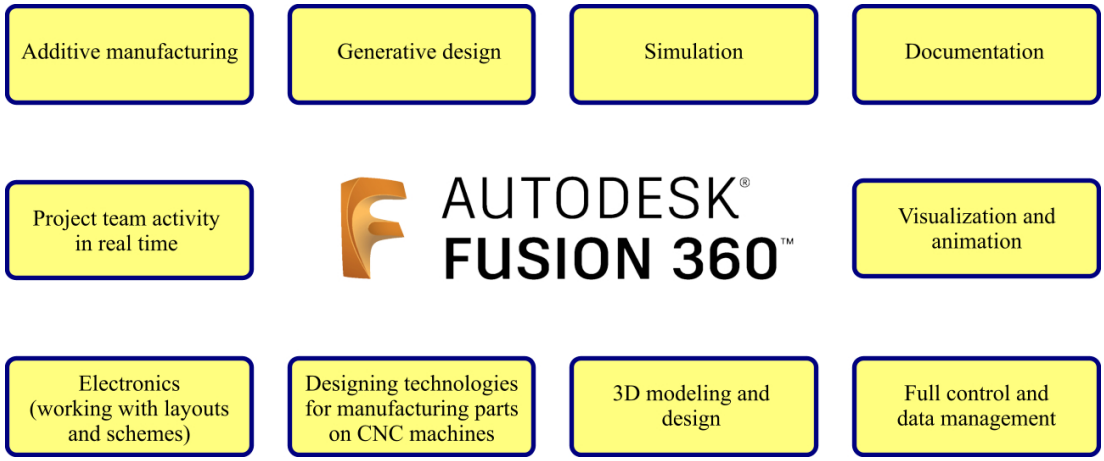

Figure 1 – Main function of the computer-aided design system Fusion 360

The conducted studies show the following:

- to date, automated design systems such as SolidWorks, Creo (Pro/ENGINEER), TopSolid, Fusion 360 continue to be widely used in the production processes of modern machine-building complexes not only in Ukraine, but throughout the world;

- powerful functionality, features of using individual modules and a successful combination with cloud technologies enable CAD Fusion 360 to confidently compete in the CAD/CAM/CAE market of modern software products.

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