

**DECISION MAKING WHEN CHOOSING COMPUTER-AIDED  
ENGINEERING SOFTWARE**

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Today, solution of computer-aided design is based on the creation and implementation of computer-aided design of technical objects (CAD), which solve the whole range of tasks from task analysis to the development of complete design and technological documentation. To date, many CAD programs of various orientations, accessibility and functionality have been developed and maintained. Search for effective system that best meets the requirements of the designer is a problem, as currently there are only formal classifications of CAD by certain features.

A complete study of the design systems market requires not only time but also special knowledge. The choice of a CAD is determined in each case by the needs of the company, its scale, peculiarities of training and production, experience and qualifications of employees, etc. This choice is not as simple as it may seem at first glance. The modern consumer prefers a comprehensive solution for existing problems, including the choice of the optimal specification of software and hardware. They are also interested in their integration with each other, selection and testing of equipment, its implementation, staff training, launch of software and hardware and its further technical support. Purchase of powerful expensive systems often does not solve all the problems of design and technological services, their implementation is very difficult and, therefore, the result of investment in CAD remains negative.

Currently in the market of CAD / CAM / CAE systems there is a large range of systems that differ in cost, functionality and the degree of coverage of the design, technological and production areas of the company.

The main features of design systems, which future users pay attention to when choosing, include the following [1-3]:

– the degree of complexity in the development and the availability of all the required functions to solve the problems;

- the degree of openness of the system to configure the user interface and connect additional software modules;
- focus on a certain type of graphics;
- cross-platform – it is desirable that the system operates on different hardware and software platforms;
- conditions of access – free / fee-based, including cost;
- the ability to create specifications and support different standards of documentation;
- the possibility of integration into a single document management system of the company, including the configuration of the language functions of the region of use, etc.

In practice, there may be much more of these issues and they are all quite specific and sometimes contradictory. Therefore, currently some developers and dealers who sell software for design, are thinking about developing expert systems that will clearly define the needs of the customer when choosing a rational software tool for design. These expert systems must interactively allow the customer and the software supplier to choose the most efficient software product to solve production problems. The use of knowledge-based systems is critical in decision support [4-6]. Therefore, the purpose of this work is to develop a prototype of an expert system for the selection of CAD, which does not require additional special knowledge in the field of computer administration and provides in a short time an advice on the system most relevant to the designer's request.

When creating an expert system, data and knowledge that are accumulated in the knowledge base are used. Its implementation depends on the choice of model of knowledge representation: semantic, logical, productive or frame [7]. In the presented development the knowledge base is designed using a semantic network. The search system of the developed prototype of the ES is based on the mechanism of direct inference.

The finished software product with certain improvements can be used in educational institutions, research institutions, design departments, architectural and design studios and by individuals.

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