

**PROGNOSTIC NATURE OF THE INDUSTRIAL DESIGN  
IN THE MODERN EDUCATION AND SOCIETY**

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**ПРЕВЕНТИВНАЯ СУЩНОСТЬ ПРОМЫШЛЕННОГО ДИЗАЙНА В СОВРЕМЕННОМ  
ОБРАЗОВАНИИ И ОБЩЕСТВЕ**

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**Abstract:** The article is devoted to Future design – modern prognostic directions of design activity. The article evaluates the prospects of introducing methods of technological forecasting in the curriculum of industrial design. We present here the list of relevant topics for lectures of the subject.

**Key words:** design, engineering, future design, forecasting, methodology, technology.

**Introduction**

The primary purpose of a designer is to create an aesthetically appropriate, comfortable and functionally justified "second nature", which consists of a harmonious world of objects and its components. The specialist should aim primarily at the solution of social problems to achieve this purpose. The designer seeks to enhance the quality of people's lives and in some way to improve the socio-cultural relations in society. Perhaps, this position seems idealistic in the conditions of a modern market economy, which is based on the idea of mass consumption, where the designer is the popular craftsman who lacks deep motivation, and who works for the sake of the customer, financial gain and her own ambitions. The craftsman creates a showy, eye-catching thing, but empty, bereft of meaning.

The artificial world of objects that accompanies us in everyday life, crowded with things that for us are not important. They create the illusion of «mediocre abundance», which renders the creation of truly meaningful things meaningless. Time is the only thing that determines the value of an object, more specifically, future social and technical changes, which will be discussed below.

**Forecasting in the design**

Prediction is a research method to analyze the development of processes; it is an important component of various sciences and engineering research. Scientists study long-term trends in the development of social, economic, scientific and technical fields in the complex discipline of futurology. This science is aimed at drafting a more general idea of the future.

Industrial design originated as a method of artistic and technical morphogenesis in industrial production of the 20th century. That time, makers were already trying to anticipate future technologies. This affects the appearance of new styles and empowering design in various spheres of human activity. We can say that the design has always been inherent in preventive features, which often allows predicting and staying ahead of existing technology. Currently, there is direction in this activity that defines the design of the future. «Future

design» has main objectives which are modeling and prediction of the evolution of technology, social and cultural changes in society. It is also focused on the conceptual design innovation which meets the intent of the future.

An important feature of the «Future design» is distance from the commercial benefits. If an ordinary design answers the question "How to produce?", then «Future design» indicates when it needs to produce. We should note the difference between marketing and design forecasting. Marketing determines what the consumer will demand in the future. «Future design» shows which objects and products will be developed in the future to improve the quality of life.

Improving the quality of life of people, creation of useful and "smart" things, formation of comfortable and safe environment, are not the only the main objectives and specific features of predictive design, but also design as a whole (Fig. 1).

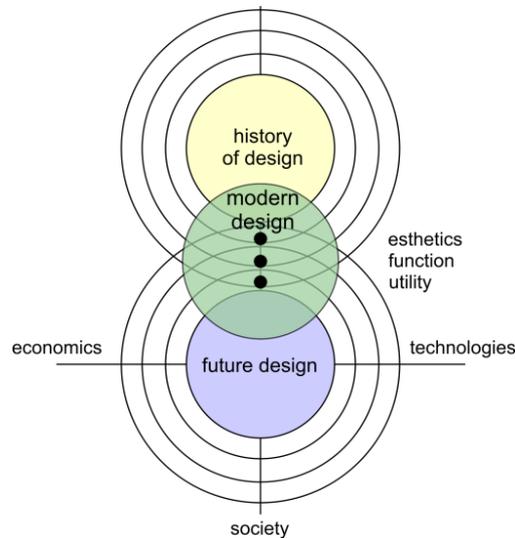


Fig. 1 The general scheme of the features of the subject design

### Social and adaptive role of design in technological and social progress

Less important prerogative of design in the public sphere is its adaptive challenges in a rapidly and radically changing world. The reason for the changes is the technological and social progress, which today is dictated by not only accelerated pace of life, but if also sets a new character change.

The American philosopher, sociologist and futurist Alvin Toffler (b. 1928), who wrote in 1970 the book "Future Shock" [2], describes the nature of psychological stress, disorientation of the individual and all society, caused by too large changes in the post-industrial society for too short a time. The shock happens because of the changes caused by the mismatch between reality and the picture of reality in the mind of a man which has not psychologically adapted to the changing times. The mismatch is generated by excessive abundance of diverse information in the field of politics, science and culture. At the end of the 20th century, with the development of such areas as Transhumanism and Futurology, this problem has found its solution in the forecasting of the future with a holistic vision of the world [3].

The industrial design makes the product accessible and understandable for a person, determines its usefulness; its role is to introduce new meanings to the public due to modern technology. Today is not enough to create an attractive design. What much more important is to create smart design that reveals not only inherent in it originally functional quality, but also to adapt to new conditions, acquiring additional non-standard functions.

It should be noted that the evolving concept the «Future design», has some of practical barriers faced by any scientific direction associated with forecasting. One of them is the "predictive horizon", or a person's ability to predict developments in the near future. In «Future design» this horizon has the following reasons:

1. Formation of spectacular form **on** outdated technologies
2. The design does not affect the specificity of a new level of technology of the virtual and physical world (nano-design, high-tech design, the design of the virtual environment, and so on.)
3. Focus on the understandable technology and forms of our time
4. Lack of understanding of the design in the new synergistic worldview.

To partially overcome these barriers to the creation of design concepts, one can use existing methods and technologies of design engineering such as inversion, brainstorming, and the method of random associations, and so on.

### **The relevance the introduction of lectures on the concept of the «Future design» in the educational process**

The boundaries of the submission and the **features of design** become blurred with the emergence of new trends and areas of application. Often, the subject of design for the layman and the customer is unclear. In this situation, the professionals in the field of industrial design have to simplify the terminology, flattering the customer. Under the pressure of market economy, the design is no longer a separate industry, and end up as an effective marketing tool.

The Russian market of industrial design is still poorly developed. Today, many manufacturers are unwilling to invest in the creation of a modern competitive design. They prefer to deal with these problems on their own, without giving them to professionals. Therefore, a new specialist in the field **finds it difficult** apply for a job. Many students majoring in "Industrial Design" are forced to think about the prospects of their future activities. Most often, they choose to work as a narrow specialization, in only one area for example, graphic, interior design and so on.

The learning process performs a significant role in the professional activity of the student; therefore it is necessary pay particular attention to the cultural and technological changes in society and the prospects for the development of industrial design in the future. The basic tasks lectures include:

1. to interest students in the relevance of the chosen profession
2. clarify the nature of the design, to identify the problems of terminology and conceptual apparatus of the design theory.
3. identify the key problems of modern industrial design.
4. determine the specificity of the profession, for a specialist in the labor market and the importance of design in the social aspect.
5. prove the importance of long-term prospects of the profession, to determine its place in the future.
6. prove that the futurist outlook means there is a new and innovative design.
7. describe the process of conceptual design designing future technology and household subjects.
8. describe the changes in the design stages, by means of new technologies.
9. respond to the question: "What comes first - the technology or design?".

«Future design» has the following prediction methods: intuitive (made without the use of technical means, based on previous experience) of the object-analogue, according to expert analysis group (Delphi method) [5].

Methods, aimed at the conceptual design stage, through the creation of which required materials and technologies are developed at the moment, have not yet found wide application or planned to be manufactured in the future.

The meaning and the basics «Future design» as workflow, are constantly designing and predicting expected trends. Sometimes, a designer offering to the engineer idea of a new technology, which can be used to create a new design (Fig. 2).

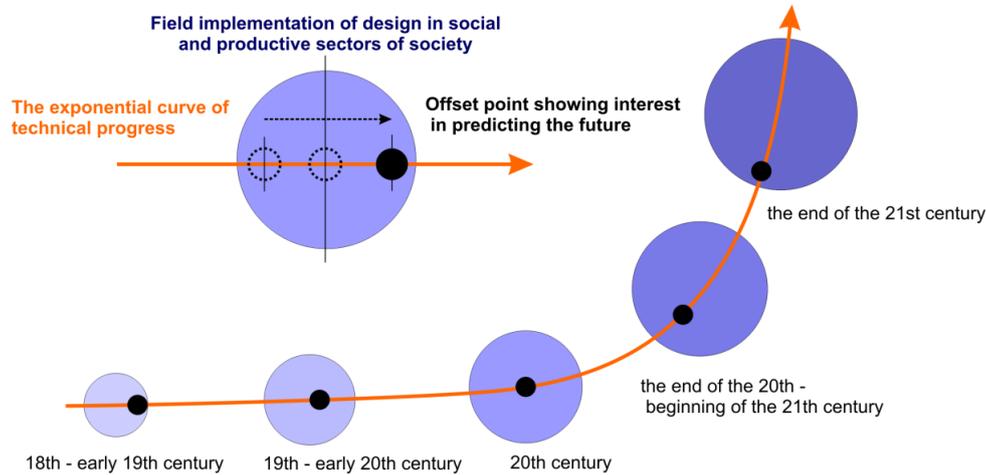


Fig. 2 Scheme for extending the application design

## Conclusion

This article deals with the problem of the application and social value of modern design, its direction of development as a prognostic tool in industrial production. Development of the design occurs when implementing a scientific approach and engineering methods. Otherwise, this specialty ceases to be independent.

The designer does not wait for a new wave of technological progress. They seek to indicate the direction in which the product should develop. The introduction of design forecasting in the educational process contributes not only to expanding the horizons of students, but also the ability to anticipate future changes in trends, to create on their basis of the design concept, which will allow to understand the direction in which, even now, you should develop the technology, society and business.

## References:

1. Medvedev V.Y. The essence of design: the theoretical foundations of design: tutorial. – SPb.: SUTD, 2009. – 110 p.
2. Toffler. A. Future shock – M.: LLC «Publisher AST», 2002. – 557 p.
3. Russian Transhumanist Movement. URL: <http://transhuman.ru> (date of access: 14.08.2014).
4. Zakharov A.I., Kuchta M.S. Features of forming the subject-functional structures in the design. // Bulletin of the Tomsk Polytechnic University, 2012, T. 321, №. 6. – pp. 204-210
5. Smirnov S.D. Pedagogy and Psychology of Higher Education: from the activity for the individual: tutorial/ S.D. Smirnov. – M.: AspectPress, 1995. – 271 p.