

CREATIVITY AND INNOVATION IN INTERDISCIPLINARY AREAS OF KNOWLEDGE.

Information Design as Highly Intellectual Technology.

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Abstract: In the knowledge economy, it is natural and logical for higher education to open to the needs of the market of knowledge, offering young and creative audience an exclusive opportunity to discover their future in knowledge, creativity and innovation, i.e. to create the very future of civilization.

Presenting a new and attractive subject such as Information Design the authors reveal new perspectives, opportunities, objectives and tasks of education in **highly intellectual, creative, and innovative areas** of science, art and technology in the post-industrial era.

Keywords: Information design, Design of Knowledge.

1. Introduction

In today's knowledge economy hardly noticeable, strange but natural processes run that lead to unpredictable consequences.

Different examples could be considered, but attention will be focused on an attractive contemporary subject - design - and more precise - industrial design.

Emerged less than a century ago in the era of intensively growing industrial and market needs, it has proved strong, to become a symbol of industrial society by the end of the 20th century. We keep exploring, describing and developing it as project culture, as a third layer of human culture at the "contact point" between science and art as a kind of analogue of triple Mobius knot, i.e. as a trinity of technical, ergonomic and artistic decisions.

At first glance, there is nothing alarming about design, perhaps with the exception of some details, but they exactly give rise to a fundamentally new "big" picture in which the evolution of design, of industrial design respectively shows subtle sides and already more pronounced symptoms. The age is different - one of postindustrial society, fantastic knowledge, indispensable need for change, driven by hyperactive creativity and innovation of people and organizations/knowledge organizations.

Therefore, without fear and confusion we must recognize that modern industrial design will stay, losing or redefining some of its functions to share or assign them to a new generation design disciplines that have adopted knowledge, creativity and innovation as a new symbol.

A special perspective is offered by IT related trends, which in turn change design irresistibly. They give it new possibilities, features and attributes, converting it into information design, i.e. design acquires new, unusual and bizarre features, tools and resources migrating/drifted to a new scenic phenomenon of design culture - information design.

Moreover, there is nothing unexpected, surprising in this process. It rather comes to an inevitable clash with traditional conservatism in every age, when people are faced with change, which sweeps in turn inertia and traditionalism itself.

In this context, it is useful and necessary to address issues related to the evolution of design in its projection as information design.

2. Assumptions and ways of addressing the problem

The problem of the evolution of design in the postindustrial society of the 21st century has two key points:

From the standpoint of design itself, and especially of industrial design:

- Design is still too much "**a craft**" and not enough "**science**". It still improvises too far aside from the value system of knowledge. It wanders between traditionalism, improvisation and tendentiousness.
- There is no serious scientific research foundation in design. Design is still more **service** and less **research**

oriented. It is still more **a producer** and less **an author** of novel products and solutions.

- Building a new methodology of its own, design could not afford to stay away from new high-tech problems and tasks.

From the standpoint of information technology, systems and tools, the concept of Information design seems at first sight an unscrupulous interference of amateurs who identify themselves with unusual areas and competencies. This is the thinking of inertia...

Therefore, the concept of information design must reasonably respond to both viewpoints.

Pleading for information design, we will continue with reflections stimulated by a thought, quoted in [8]:

"Information is a wonderful tool for efficiency and information technology is a wonderful tool for information management, but I am not interested in information technology or information. I am interested in knowledge and information of knowledge and efficiency.

In addition, these are different problems - related but different."

These points taken out of the broader context are relevant to the "Information Design" case as well. Information and knowledge are different things, but they are related, mutually interpreting and matching, i.e. they are complementary. So if in principle there is consent regarding knowledge that information design must work with the same is the issue with the term "information". Design deals with the meaning/significance of information and not its value interpretation.

Let us support the above said with a modification of C.E. Shannon's classical scheme [7] (Figure 1.):

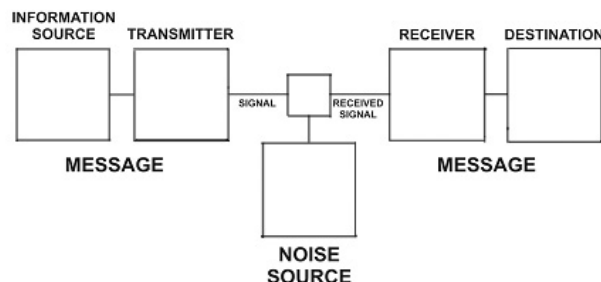


Figure 1. General schematic representation of a communication system.

An amount of information ("message") is the **information** (text, images, etc.) which communicates between the transmitter and the receiver.

It is reasonable to assume that formal saturation of training in communication and computer systems and technologies with knowledge and skills inherent of design also leads formally to the formation of a new subject - Information Design - with seemingly no alternative remedies and options.

However, such an approach has an alternative!

The above-mentioned **amount of information** may contain/have a particular meaning for design, apart from that already discussed, or may bring valuable knowledge that farsighted professionals - designers can utilize. This means that a designer should be ready to work with semantic information by handling/processing it and to use it also as an author to transform it into radically new ideas and solutions, for defining new problems, tasks, projects, etc.

What can information design have in common with this?

In terms of design Information Design is just at the "contact point" between the two interpretations (Information Technology and Managing of Information), without being any of them or just a mixture of both. It makes very little of what any of them does and much of what neither could do. It could do it on its own or in cooperation with them.

Thus with the idea and perspective already outlined there is at least one more alternative of information design initiated by design itself in search of productive ways and areas for development.

Any symptoms of jealousy to keep the area of high intellectual technologies "for themselves" are simply ridiculous. There could be no "own" territories in our age just because there is no lord of knowledge. Various experts may engage in the same **object of study**. The difference is in the **subject of study** - the methodology, purpose and objectives, training and its results, benefits and contributions, etc.

Whatever the perspective, the fact remains indisputable that it is about a new phenomenon - a new type of subject, which rapidly spreads in modern post-industrial world under the name INFORMATION DESIGN or INFORMATIONAL DESIGN.

Our analysis of information available on the Internet for the period 2002 - 2012 may be briefly summarized:

In 2002, about 22 universities around the world offered training in Information/Informational Design. Contacts have been established with some of them.

In 2007 already 66 universities around the world offered that intellectual service - a degree in Information Design - on the market of knowledge as follows: in the U.S. - 37 universities; in UK - 8; in Japan - 4; in Austria - 3; in Germany, Australia, and Switzerland - 2; and in Singapore, the Philippines, New Zealand, Ireland, Norway, Sweden, Greece, Russia - 1.

Currently, in 2012 the trend is clear and indisputable.

Reviews and publications on the phenomenon Information Design have been found - from enthusiastic to pessimistic, even by celebrities like Jef Raskin: *"There is No Such Thing as Information Design"* However, the world is well familiar with such "predictions".

There are magazines that specialize in information design, scientific conferences and congresses are being conducted ... The idea is simply alive.

University visions of information design cover a wide spectrum - from traditional graphic interpretations to surprisingly advanced ones. Some of those raise the idea of knowledge, creativity and innovation.

The concept developed in the University of Ruse, Bulgaria belongs to the latter, particularly in the "Industrial design" department, as is evidenced by publications [1 and 6].

3. Solving the scientific problem

Purpose of INFORMATION DESIGN:

Creating products, services and intellectual solutions for various purposes and of valuable art works and decisions that require unprecedented knowledge economy, creativity and innovation:

- Scientific, technical, ergonomic, artistic, technological and other knowledge and skills inherent of design as a design culture in postindustrial society.
- Adequate and complementary knowledge and skills in designing products/services and information systems and technologies, based on creativity and innovation.
- Research, innovation and inventive knowledge and skills as prerequisites for transfer/transmission of knowledge/information and production of new products and services based on competence in the field of rational knowledge/information and leading to the creation, protection and capitalization of intellectual property.

Key tasks of INFORMATION DESIGN

The key tasks of Information Design are divided into three levels (Figure 2.):

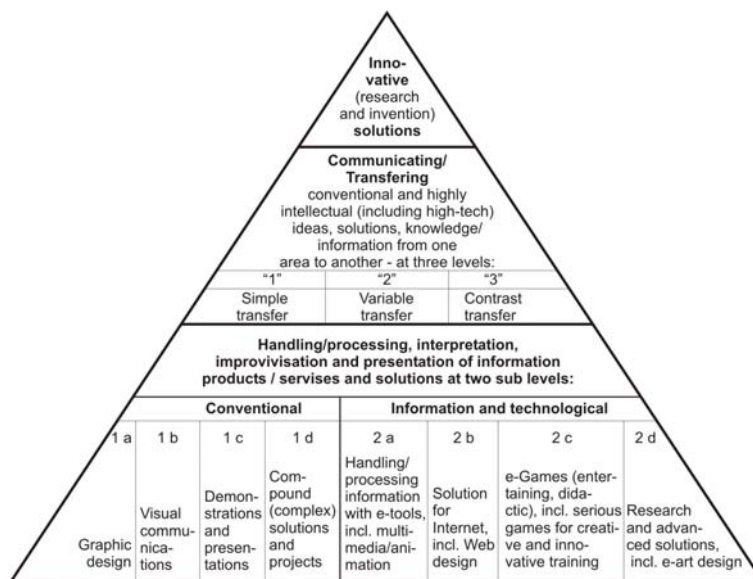


Figure 2. Objective pyramid of INFORMATION DESIGN

1. Handling/processing, interpretation, improvisation and presentation of information products/services and solutions at two sub levels:

- 1) Conventional;
 - 1a - Graphic Design
 - 1b - Visual Communications
 - 1c - Demonstrations and presentations
 - 1d - Compound (complex) solutions and projects
- 2) Information and technological:
 - 2a – Handling/processing information with e-tools, incl. multimedia/animation.
 - 2b - Solutions for the Internet, incl. Web design.
 - 2c - e-Games (entertaining, didactic), incl. serious games for creative and innovative training.
 - 2d - Research and advanced solutions, incl. e-art design.

2. Communicating/transferring conventional and highly intellectual (including high-tech) ideas, solutions, knowledge/information from one area to another - at three levels:

- “1”. Simple transfer.
- “2”. Variable transfer.
- “3”. Contrast transfer - by inverting an output model/idea.

3. Innovative synthesis of advanced products, facilities, systems and solutions based on specific scientific, research and inventive knowledge and skills.

4. Results and discussion

4.1. The tasks at the first level are the subject of information design in its design and aesthetic, creative, and innovative nature:

- It is not simply a mechanical entry into informatics or computer systems and technologies.
- It is a new qualitative level of symbiosis of design and information technology and resources.
- It is in itself a new type of subject, which is distributed exponentially in modern post-industrial world under the name INFORMATIONAL DESIGN or INFORMATION DESIGN.
- This form of training still has no analogue in Bulgaria!

4.2. The tasks at the second and third levels of information design, in its unique function as a carrier, interpreter and implementer of knowledge, research and initiative in actual marketing environment, represent a new challenge for design as design culture in postindustrial society in the era of information technology.

4.3. Build such a design requires:

- A new paradigm (new model) of design and design education.
- A new philosophy and a new methodology of design.
- Readiness for action in a new spiritual, economic and marketing environment - in an era of knowledge, creativity and innovation.
- An individual willing to accept the new ideology of intellectual design, of information design.

4.4. In the spirit of this formulation the new quality of design as design culture is clarified - **complementarity**, and mutual dependence of industrial design and information design respectively (Figure 3) with all derivative new incentives for theory, training, practice, research and reproduction of design in the 21st century.

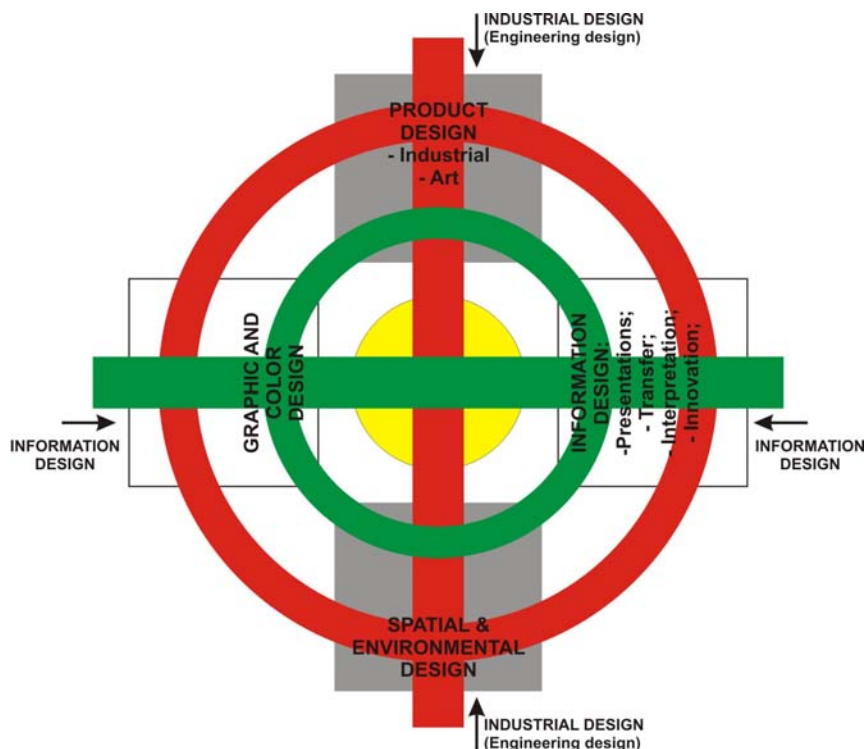


Figure 3 INDUSTRIAL DESIGN - INFORMATION DESIGN
"ARTERIES AND PATHS TO PRACTICAL REALIZATION"

Nonlinearity of design as a creative mental process and complementarity of industrial and information design.

5. Conclusion

The introduction of training in Information Design is a serious and urgent imperative of science, art and practice.

Underestimating it would be not only a lack of imagination but also shortsightedness. Ignoring it would deprive a talented young generation of the chance for realization and erode the activity of economy, marketing and those participating in them.

Without prophecy, this could be the case if training in design is "encapsulated" only in frameworks and schemes that are rapidly growing old.

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