

Learning from the Art: The Art on the User Interface

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Abstract

The computer is a tool used to accomplish goals. The computer programs are creative task, and the user interface is the way to achieve to the goals that the computer programs perform. In this context, the user interface should play a creative role too, mixed up with the proper work itself. This paper proposes an alternative way of building user interfaces according to this concept, and applying techniques widely used in art.

Keywords

Visual Design, Interface Metaphors, Adaptable User Interaction

1. Introduction: The role of the User Interface

Computer is a common tool on the human everyday's life, and is used to achieve goals when performing computer-tasks. The User Interface (UI) is the layer communication between the user and the computer, and therefore, it should adequate the computer features to the user's needs. This is not always obtained with usual applications because the time and costs to obtain this objective are not proportional to the required effort.

The UI is a living and dynamic layer which is intimately related to humans. The purpose of the UI is to isolate the user from the internal details of the computer systems, and to give assistance to the user in order to perform their tasks easily. Therefore, the UI becomes closer to the user and it should be comprehensive to the human's mind. For such reasons, we have to design the UI independently from the computer programs, allowing the user to personalise the interface to his own way of thinking, working and perceiving the reality.

2. The creative process

The visual media is the vehicle to transmit ideas and concepts, the human reasoning, their creativity as well as their feelings[3].The creative activity involves a methodological process orientated to achieve a goal. To perform an UI we may use that methodology combined with visual variables. The steps followed in a creative process are briefly commented below.

- **The ideation phase** is the preliminary phase for any creative process. This initial step focuses on the assessment of a creative basis. For that objective, the artist uses different sources of inspiration which may contribute to the result, such as scientific sources (physic, biology nature, etc.) or human aspect (reasoning, perception).
- **The conceptual phase** is related to the identification of the ideas regarding to the graphic compounds, and the way in which they are collected during the methodological process. These ideas have to be expressed in some way over a picture, sculpture of any expressive surface. The methodological process involves some restrictions/possibilities of expression, to open/close new formalities and to give methods to perform this. Therefore, we have different ways of expressing the same idea.
- **Creation of forms.** This step focuses on representing the object which constitutes the work by using modelling techniques. This creative phase involves the construction of the main graphic compounds of the resulting image. Every one forms part of the communication process, and the whole combination represents a homogeneous unity.
- **Analysis** is the study of the objectives of each one of them components and its support to the final work (from individual components to the global composition). This may be

considered as a late stage in which the author performs a judgement on the final work and its adequacy to the initial purposes.

3. The User Interface Layer

Architectonic approaches have been proposed in the UI definition using the layer approach [2][4][1], but in many cases these approaches are dependent on the system and the use of toolkits to build the UI. Therefore, the resulting UIs have a similar appearance because they use the same standard components. We propose a layer approach that separates the UI from the computer program process. In this context, we define layer taxonomy according to the functionality of each layer.

- **Visual layer.** This layer defines the external appearance of the User Interface. It may be in principle static, but it can be modified with filters.
- **Content layer.** This layer defines the area in which the information is contained (input/output information). The limits of the display are a restriction for the availability of such space, but we can use other techniques which could help us to show relevant information. In any case, the shape, size or location can be restricted. Thus, these variables may be dependent on the context in which the information is showed.
- **Filter layers.** Filters are a special type of layer that modifies part of the interface. It may be used as a *mask*, preserving parts of the interaction activity or merely as a **filter**, modifying some aspects of the visual appearance (noise, contrast, enhancement, etc.). Filter can be applied to other visual layers to show temporal changes, according to a particular event in the system.
- **Behavioural layers.** This type of layer defines a semantic action of particular regions in the User Interface. These areas can be described as sensitive points with interaction abilities. The link defines a relationship between a particular event (focus in, movement, mouse click, etc.) and a related effect on the User Interface (change the appearance of the UI) or actions of the Core System (save, print, copy, etc.).

4. Conclusions

In this paper we have presented a new conception of the User Interface based on layers. This approach is rooted by the creative process used in designing and fine arts. By doing so, the User Interface can be improved, allowing to adequate different users and situations. Additionally, the proper creation of the User Interface has an artistic nature. An author when designing a UI follows a similar methodology as for painting a picture. This may be useful to register the way of performing the task on the computer.

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