Chapter 13

Computer Providing Data, Services, and Analytics:
The Role of User Interface

ABSTRACT

This chapter is dedicated to informing users via computer applications. The role of user interface in informing may allow users to get full benefit of computer-generated output. An idea how to develop user-customized interface by considering the risk of misinforming is presented and discussed. In this chapter the misinforming hazard is also considered from its positive role when it provides opportunity for the user to learn. The role of interface in computer's accessed and delivered information is not only a tool to deliver information filtered by its origin and results of data processing, but also it may serve as tool to guide user in learning about the property of data domain, data processing techniques, and validity of results. The well-designed user interface of a computer application can lead to better understand and interpret results of data processing by adding explanations and guidelines to overcome lack of competences and to reduce the risk of becoming mislead by provided information.

INTRODUCTION

This chapter addresses the issue of misinforming from the point of view of communication of a user with computer delivered information – the role of interface and user-experience with the computer application; and the opportunities provided by nowadays Information Technologies to support users in assessing and interpreting data. The latter is especially important in informing by "Big Data" analytical that

requires additional competences (see Christozov D. & Toleva-Stoimenova S.,2015) going well-beyond data domain, but also needed competences in statistics, data processing algorithms, validity of applying mechanically an algorithm to data with specific structure, format, scales, etc.

The problem of composing the advertising message was discussed in the previous two chapters under assumption that the potential clients are already attracted by the product and the objectives of information provided were to help them to make a rational informed purchase decision by reducing the risk of becoming misinformed.

In on-line commerce, the first problem the seller must solve is how to attract clients and to encourage them to pay attention to the messages and to consider the advertised product as a potential solution for their needs. This stage relay mostly on the emotional impact of the visual component of the message and its attractiveness. The visual load nowadays is extremely stressful, and the visual noise has significant impact on how to perceive information. Some authors (see for example Kim D. 2010 or Kyvykaite R. et al. 2009) argue that an average individual is exposed to more than 1500 images a day, less than 70 of them captured her or his attention, and only 5 to 10 are attractive enough and lead to be memorized. Designing visuals often over emphasized attractiveness on the expense of informativeness, especially in e-commerce information systems designed for advertising products.

Designing interface that balances between attraction and avoiding misinforming is addressed throughout the chapter. The ideas for user-interface design model follow the one proposed in Christozov D. & Mitreva E. (2020), which emphasizes the trust in information generated by data analytics. The trust aspect in designing interface is essential to complement attractiveness of an advertisement.

Building an application in a way to support reaching confidence and trust is based on the way how the user acquires, understands, and interprets obtained information. Additional component is that the user must "like" the way data is presented. In the case of Big Data information is presented in the form of summary statistics, aggregations, and especially important – visually as diagrams, charts, maps, etc. In the case of e-commerce, the application attracting potential clients by illustrating the usage of the product and use of visuals are highly used. Balance between "exact" quantitative characteristics and qualitative visual presentation marks the good design. Overestimation of one of these aspects may lead to either negative attitude – the potential customer doesn't like and is not attracted by the offer; or positive but wrong purchase decision – decision made emotionally; the presentation is highly attractive, but its technical properties are hidden that leads to post-purchasing unsatisfaction.

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