The techniques of achieving an elegant GUI design through simplification

Graphical User Interface (GUI) is a communication-oriented graphic design supporting human-computer interaction (Mullet & Sano, 1995). The primary goal of GUI is to use the graphical elements, such as typography, layout, symbol, and etc. as a visual language to guide human to extract required information to complete specific tasks and hence ease the use of applications. The term *elegance*, meaning "select carefully" in Latin, is the top compliment for a graphical design. An elegant GUI design is a novel approach that is aesthetically pleasing without minimizing the intuitive usability of functions (Mullet & Sano, 1995). Since simplification plays a key role in elegance, this article will discuss three rules of thumbs to simplify complex designs while maintaining their effective functionality.

The first technique is *reduction* – only displaying the essential items, which are further presented in their essential form. The communication between the computer and the human is actually enhanced in the minimal display because the functionality is clearer and the guidance to problem-solving is more intuitive. In applications with many functions, it is common that some features are less important or frequently used than others. The simplest reduction is to remove them from the default display, but part of the functionality can be lost consequentially. Instead, "hover control", a design that hides the controls but show them when the user hovers to a certain area might be a more effective reduction.

After reduction, the remaining elements need to be organized into regular patterns, namely *regularity*. Because human vision tends to perceive items in groups, regularity can enhance a clear communication by simplifying the perceptual organization for users. A good regularity can be achieved by using the basic principles of design: repetition, proximity, and alignment. (Williams, 2014). For example, the goal of the Government of Canada webpage (Figure 1) is to provide the most comprehensive information for the users, and such visual complexity requires a clear structure to achieve elegance. The current design is functionally effective. The repetition of color and typography unifies the subcategories; the sub-headings and their contents are grouped by the proximate distance, and the large space between the sections indicate different categories. But aesthetics of the design will be improved by aligning the photo to the text's left side, which has a strong line. Because the trapped negative space will separate the text and the related photo apart (Williams, 2014).

The most challenging technique is *leverage*, at which a single design element serves multiple purposes. It is also extremely efficient as it maximizes the power of a GUI design in a limited size of an interface. Aesthetically, leverage potentially increases negative space and prevents users from bombarded by intense information. For example, pagination (Figure 2) not only shows where users are relative to all the information but also navigate users to certain page by clicking. However, the best user experience is not necessarily the leverage element with the most functions. It becomes too complex to remember all the functions and the respective methods to activate them.

GUI is designed for enhancing the visual communication between human and computer, and help users intuitively navigating through applications and solve specific problems. An elegant GUI needs the designers to understand users' demand and develop approaches to ease the use in an economical way while maintaining the aesthetics. This article lists three basic techniques to achieve elegance through simplification: 1) reducing the displayed elements to essence; 2) organizing elements in regular patterns; 3) applying multiple roles to one element.

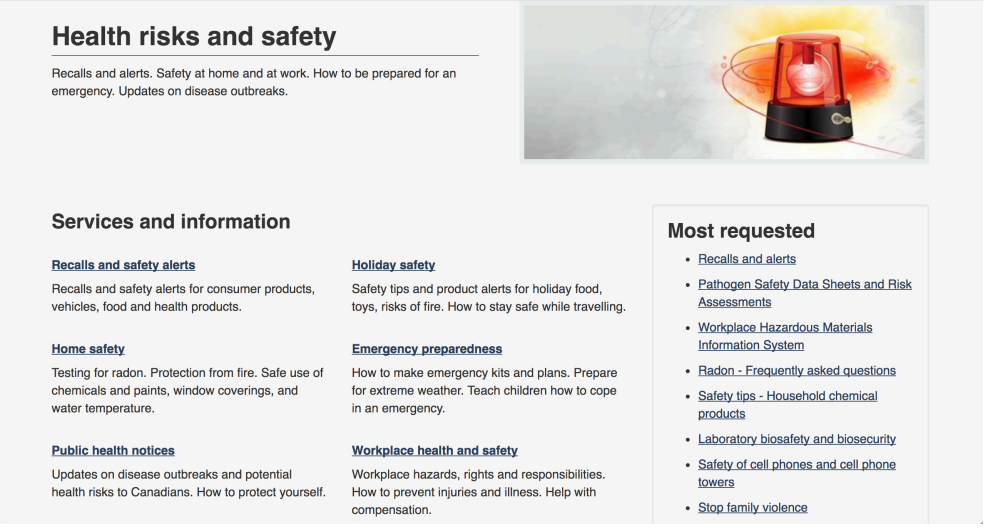

Figure 1

Figure 2

Reference

Mullet, K., & Sano, D. (1994). Designing visual interfaces: Communication oriented techniques.

Williams, R. (2014). *The Non-designer's Design Book* (4th ed.). San Francisco, CA: Peachpit Press.