Chapter V

Information and Function Chunks as Building Blocks in the Control Room of Life

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Abstract

Inspired by work on systems for control rooms, this chapter describes how working with information on the Internet and other types of network-based information systems can be made easier by applying five principles:

1. by providing information to the user about any changes to the information that may affect him or her;
2. by dividing information and functions into chunks—the smallest possible meaningful units;
3. by automatically synchronizing navigation and parameters in different chunks;
4. by using views that each gives access to chunks that are relevant in a specific situation or for a specific task; and
5. by sharing information from one terminal to another as needed.
Introduction

The owner of a Web site may upload information that later is downloaded by other users. This is an example of a networked communication where one or more information providers push information out into a space from which users of that information may later pull it.

In contrast to phone calls and chat, it is not possible to ask a question and get an immediate answer through this type of networked communication. However, it offers other advantages:

- Information providers can provide information at the moment when it is most convenient for them.
- Users of the information can get access to it when they need it and when it is convenient for them to deal with it. In some cases, that may be many years after it was made available by the information providers.
- It is not necessary for the information providers to specify in advance or even to know all users of the information.

This type of communication is much older than the Internet. We find similar combinations of push and pull in the publication of newspapers, magazines, books, and in the establishment of libraries. Our organization of information on the Internet reflects these older types of communication: we organize information as Web pages, even though the concept of a page containing a number of sometimes-unrelated pieces of information makes most sense when information is distributed on paper. We imitate the principles and characteristics of a displaced type of technology, not unlike the first passenger carriages for trains that were shaped as three horse-drawn carriages on a common set of wheels. Archaeologists use the phrase “Skeumorphism” to describe such imitations of a displaced technology (Basalla, 1988).

One common consequence of imitating displaced technology is that the new technology becomes less flexible than the older technology it replaces. Often, a user can easily cut out or make a photocopy of any part of paper-based information that he or she needs, and there are a number of tools readily available for making annotations or indicating relationships on each piece of information. In most cases, these actions are much more difficult on electronic information.

On a desktop in the physical world we are forced to distinguish between tools—such as a calculator or a ruler—and pieces of paper with information on them, and we have similarly implemented that distinction in computer interfaces (spreadsheets being one of the few exceptions). As a result, the computer interface is actually less versatile than the physical desktop. We have implemented the limitations of
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