

Reflections on information structures – mental effort and task appropriateness

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One of the most typical and complex menus we use every day is the Start Menu. It contains large amounts of information which are not always logically organized. There are many use cases which apply to the Start Menu, often dependent on the available functionality. Typically, there are four types of activities associate with information retrieval from the Start Menu.

Finding a known application for a known task. For example, you know Photoshop is installed and it is appropriate for editing an image you want to put on your web page. This is a known-item information need which is most appropriately addressed by a search system or an index. Ideally it is a experiential task, however some reflection may be necessary for using the search system. A user who knows what they are looking for and has experience accessing it should be able to simply find their item without much mental effort.

Finding an unknown application for an known task. For example, you want to play a movie but do not know what application you can use. The information needs to be addressed are a mix between known-item needs and selective research. Search systems and indexes still work, however the user may not have enough information to easily use these methods. A filtering or winnowing approach to a collection of information will help the user narrow the information based on their previous knowledge until they find the desired result. This is a much more reflective activity than finding a known application for a known task, however the combination of the user's known knowledge and the appropriate information structures should help reduce mental load.

Finding an known application for a unknown task. For example, you have installed RealPlayer on your computer because your friend said you need it, but you're not really sure what it is for. This is similar to finding an unknown application for a known task, except the user has knowledge of different information. The point of both these scenarios is that users have small pieces of information to help guide them, which may or may not be enough to find what they are looking for without the aid of more complex, reflective tools. A combination of the right knowledge and right tools help makes these activities flow.

Finding an unknown application for an unknown task. For example, you want to browse the available system software in order to be more familiar with what is installed. This is an open-ended information need with no clear information selection goal. There are many information structures which help facilitate this: guides, hierarchies, search wizards, and methods which allow switching between searching and browsing. This is a reflective activity requiring the user to analyze and make sense of the given information in order to make a decision to proceed. Armed with little or no information to aid in searching, this is very involving activity.

The Start Menu is a hierarchical menu which categorizes applications to help users find them. There are many problems with this model, besides the fact that the Start Menu is traditionally poorly organized with no logical naming or categorization scheme. A hierarchy is very useful for open-ended and exploratory information needs, however those needs are not common in the user activities described. To navigate these hierarchies – especially when the labeling and organization is sub-optimal – requires users to stop and make decisions unnecessarily. If a user knows what they are looking for, why must they stop and think so

much?

It is interesting to note that most of the scenarios do not suggest a hierarchical structures for addressing the common information needs. Our experience with the Start Menu may have faded our opinions about the difficulty of the menu structure, but the hierarchy we use every day is not the most optimal way to be interacting with our information. Yes, the information is logically categorized and the hierarchy is a valid organizational method. The point is not the organizational accuracy, but the appropriateness of this structure. It does not account for the user's information needs in any way and forces them to use an inappropriate and unnecessarily complex structure to accomplish their tasks. As a result, many of these experiential or slightly reflective activities require more mental effort than necessary.

References:

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