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## Personalized catalog of categorized online information resources

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## **Personalized catalog of categorized online information resources**

### **ABSTRACT**

Novice users often find it challenging to realize the full potential of available information resources. One approach to help overcome these challenges is to present users with a categorized directory of ranked recommendations for useful information resources, such as apps or websites. However, a single directory and categorization is unlikely to be equally relevant and useful for all users. This disclosure describes techniques to provide a continuously updated catalog of categorized information resources personalized to the user's needs, expertise, and context. The techniques are implemented with user permission. For each resource within the catalog, the user is presented with associated useful information. The resources are presented within a common interface, thus making it unnecessary for the user to be aware of distinctions between different types of resources.

### **KEYWORDS**

- User expertise
- Novice user
- Personalized catalog
- Personalized directory
- App catalog
- Blended app and web site catalog
- App discovery
- Web site discovery
- Mobile devices

## BACKGROUND

Novice users often face a steep learning curve to discover relevant information resources, such as websites and apps, and to understand how to use these resources effectively and efficiently. Novice users are also less likely to differentiate between different categories of a given type of resource. For instance, such users may view and use all apps in a similar manner without making a distinction between whether an app is a system app of the device operating system, a pre-installed app from the device manufacturer, an app downloaded from a repository, a progressive web app, an app running within a website, etc.

From the point of view of such users, any information resource serves as a means for accessing specific content or information. Further, novice users often have limited awareness of available information resources and lack the knowledge, experience, and confidence to engage with unfamiliar resources, such as apps and websites. Moreover, such users can be further constrained by lack of resources, such as hardware capabilities of the device, bandwidth, available storage space, operating system version, etc. Taken together, these factors make it challenging for novice users to realize the full potential of available information resources.

One approach to help overcome these challenges is to present users with a directory of ranked recommendations for useful information resources such as apps or websites. Such a directory can be organized to provide categorized listings that enable drilling down into various resource types, such as “Entertainment,” “News,” “Finance,” “Productivity,” etc. However, a single directory and categorization is unlikely to be equally relevant and useful for all users. For example, a catalog appropriate for a user in Lucknow, India is different from the one that best serves someone in Lagos, Nigeria. Similarly, a catalog appropriate for a novice user in Jakarta, Indonesia is not the same as that for an experienced user in the same city.<sup>[1][SEP]</sup>

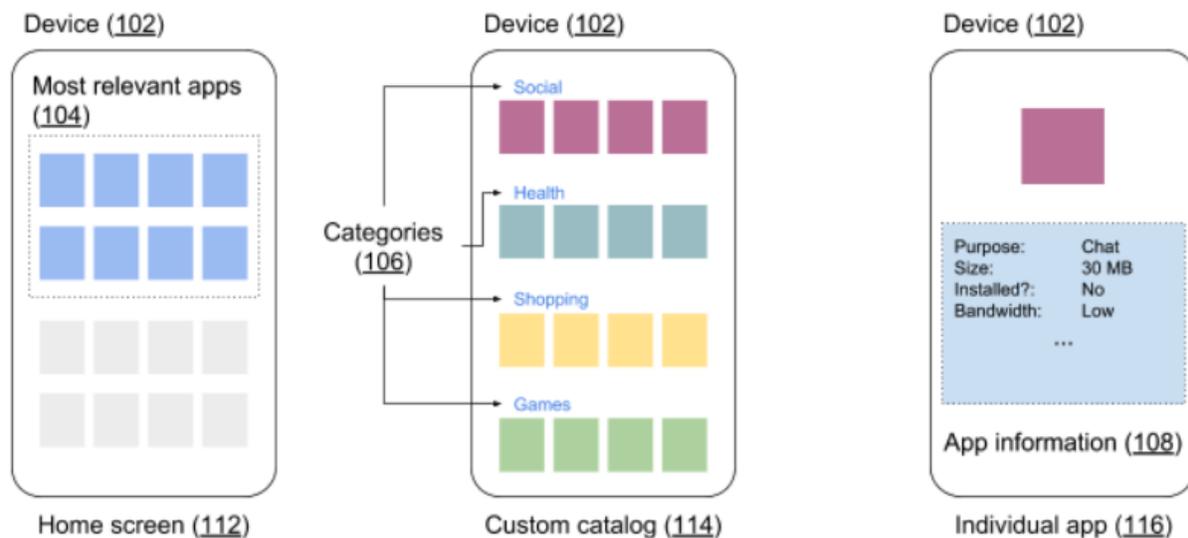
## DESCRIPTION

This disclosure describes techniques to provide a user with a catalog of information resources, including but not limited to system apps, pre-installed apps from the device manufacturers or service providers, apps available in an online repository such as an app store, websites, and progressive web apps, etc. The content of the catalog is generated based on crawling and indexing online resources. The content is subject to quality checks. The content is ranked based on relevance to the user, if the user grants permission. The resources are presented within a common interface, thus making it unnecessary for the user to be aware of distinctions between different types of resources.

For each resource within the catalog, the user is presented with associated useful information, such as function, usage scenarios, installation parameters, memory requirements, bandwidth used, etc. The information provided for making use of the resources can differ based on the type of resource. For example, catalog entries for apps that need to be installed from an online store can include installation instructions along with other relevant information, such as disk space requirements, estimated download time, etc. Similarly, catalog entries for websites and progressive web apps can indicate speed of operation, estimated bandwidth use, availability for offline operation, etc.

If the user permits, the catalog is personalized to include resources most relevant to the user's needs, expertise, and context. With user permission, the information resources within the catalog are automatically categorized into groupings deemed most appropriate for the user. For instance, such groupings can include categories such as entertainment, shopping, social, game, health, etc. The groupings are annotated with supplementary information to facilitate and assist the user in understanding their purpose and value.

With user permission, the catalog can be updated and evolve continuously. To this end, new resources launched by the user can be categorized and added to the catalog, if permitted by the user. When new resources are added, new categories can be generated as needed. On the other hand, resources that no longer offer updated and/or relevant content can be removed from the catalog. Similarly, if any of the resources within the catalog change, the supplementary information associated with the resource is updated as necessary to reflect the changes. Moreover, if the user permits, additional resources and categories can be made available in the catalog as the user is detected to transition, e.g., from being a novice user to being a skilled user. Further, with user permission, the catalog can include recommendations for resources that complement those already being used by the user.



**Fig. 1: Personalized catalog of categorized apps**

Fig. 1 shows an example personalized catalog of apps, based on implementation of the described techniques. A novice user using a device (102) is initially presented with recommendations for a small set of most relevant apps (104), e.g., displayed on the home screen of the device (112). The initial small set allows the user to navigate to the full catalog of apps

(114) that is personalized and categorized to fit the user's needs, expertise, and context. Apps within the catalog are grouped into various categories (106). The user can drill down further into the individual apps within each category (116) to access useful information about the app (108). Such information can be provided as text with specific numbers and/or presented in generalized visual forms, such as stars, dots, traffic light type indicators, bars, buckets, etc. The user can use a mechanism such as drag-and-drop or long press to promote an app from the full catalog and anchor it to the home screen.

The described techniques can be implemented as part of a device operating system or as a separate software application. The techniques can also be utilized in search engines or apps.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information (e.g., information about a user's social network, social actions or activities, profession, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used, so that personally identifiable information is removed. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user, or a user's geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level), so that a particular location of a user cannot be determined. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

## CONCLUSION

This disclosure describes techniques to provide a continuously updated catalog of categorized information resources personalized to the user's needs, expertise, and context. The

techniques are implemented with user permission. For each resource within the catalog, the user is presented with associated useful information. The information provided for making use of the resources can differ based on the type of resource. The resources are presented within a common interface, thus making it unnecessary for the user to be aware of distinctions between different types of resources. If the user permits, additional resources and categories are made available in the catalog as the user is detected to transition from novice to skilled. Further, with user permission, the catalog can include recommendations for resources that complement those already being used by the user.

#### REFERENCES

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