Search in mobile app stores

By Simon Herd, October 2009

Introduction

App stores are just over a year old, but they've come from nowhere to become one of the most talked about aspects of the current generation of mobile handsets, with the number apps available ever increasing. They are however in danger of becoming a victim of their own success as apps become increasingly difficult to find. As the stores get larger they are going to have to evolve to overcome this and becoming more search-focused is a key part of this. This article explores the situation and offers some guidelines for app store searches.

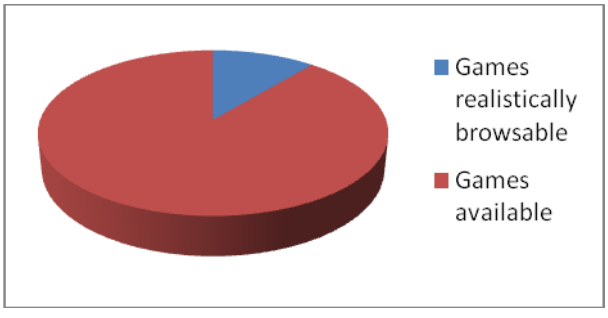
Discovering a needle in a haystack

The numbers surrounding app stores are staggering. Since launching in July 2008, the Apple app store has delivered 1.8 billion downloads of 75,000 apps[1]. The figures are smaller for other app stores, but the Android Market Place is reported to contain over 10,000 apps[2] and as the range of Android handsets increases this number inevitably will too. The scale of likely growth is demonstrated by estimates that the US smartphone app market alone is estimated to grow from $343 million revenue this year to $4.2 billion by 2013[3].

So far all the app stores have focused on a series of nested menus to organise this content. The user sees this first when they enter most of the app stores currently available. This means that they have to step through a number of menu levels to reach the relevant category and then scroll a long list of apps until they find what they need.

A point is reached where the browse structure is no longer an effective way of finding what you need. We can indicate the extent of this by considering how users typically browse and how much of the overall menu structure is likely to be encountered when doing so. Taking the Apple App Store as an example;

- Within the Apple App Store, there are 19 categories, one of which is Games.
- Within Games there are 20 sub categories (e.g. Action).
- Each Games sub category is divided into lists for Top Paid, Top Free and Release Date.
- Each of these lists displays 5 games without scrolling.



- Depending on motivation, we often see users scrolling up to 5 screens of items before they start getting bored, meaning users may see about 25 games in any given screens.

[1] Apple media event Sept 9th 2009
[2] http://www.androlib.com/appstats.aspx
[3] http://www.yankeegroup.com/pressReleaseDetail.do?actionType=getDetailPressRelease&ID=2468

- If they look at Top Paid, Top Free and Release Date screens, they would look at 75 games.
- With the 20 Games sub categories, this means that about 1,875 games are within reasonable scrolling distance. This is only a small proportion of the number of games available for the iPhone (quoted as between 13,000[4] games to 21,178 "game and entertainment" apps.[5] For the purposes of the chart above, we've assumed about 18,000 games.

Simply put, there are far too many apps to find by browsing alone. Search will become more important for finding apps.

Relative search and browse visibility - We've been here before

Browsable directories used to be prominent in web searches, but no longer tend to feature.

We've seen a shift from browsing to searching before. Those using Web for a few years may recall earlier versions of search engines which proudly displayed browsable directories alongside the search field. As available content increased, the usefulness of these directories correspondingly decreased until they disappeared. This trend isn't limited to web search engines, research software has gone through a similar process.

[4] The figure comes from Casual Gaming.biz, Sept 7th 2009, although the figure doe vary substantially from source to source

[5] Phil Shiller at Apple event in SanFrancisco, Sept 2009

Search Guidelines

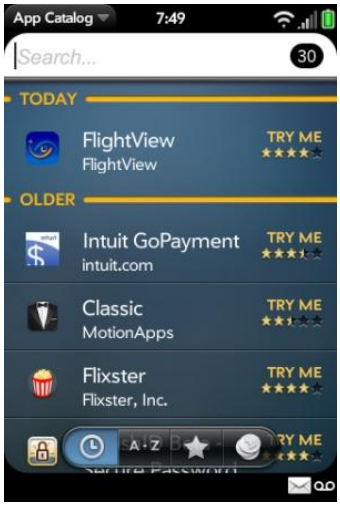
Accessing search

Display a search field immediately when an app store is opened.

Search is going to become increasingly important but few of the current app stores display a search field in the first screen opened.

Some display a search field upon selection of a further option on the page, typically at the bottom of the screen, although less obviously in the Nokia Ovi store in a grey top bar (widely interpreted as an unavailable option).

One that does display a search field immediately is the Palm Pre App Catalog, with the search field prominent at the top. The search is prominent and ready to go. Expect others to be following this trend soon.



A prominent search field in the first screen of the Palm App Catalog

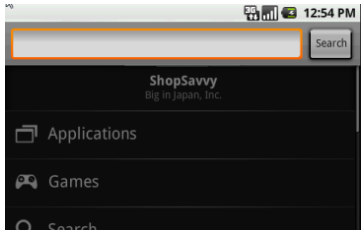
Entering a search

Present the search as a single-line text field, with an obvious search button.

Existing app stores tend to do this and it is exactly what users expect, based upon their experience of web searching.

From our experience, users don't tend to want to construct complex searches, using multiple fields and drop-down menus on the mobile handset. They are more interested in putting in a quick one or two word searches and seeing what they get.

Keeping it simple is key.



The search field should be no more than one line and have and obvious action button

Support natural language searching.

Again, users are familiar with this style of searching from wider web searches and they don't like to adapt for particular circumstances. It's also a critical area to get right, as if users don't feel they are getting the results they need they won't bother with it regardless of the user interface.

For example, the BBC iPlayer is a popular app in the UK for watching TV on demand. It is available on the OVI app store as "BBC iPlayer", but it is not included in the search results when "BBC" is used as a search term. The only result returned was for the Midomi Music Identifier. Search results like this

A unsuccessful search for "BBC" when the user knows the "BBC iPlayer" is available will undermine trust in the feature

are so profoundly different from user expectations that they put users off from ever returning.

A more subtle example of a problem is shown in the example on the right. A search for "flight control" includes a football game entirely unrelated to the topic which is likely to also put users off.

The second result appears unrelated to the search term, which can undermine user opinions of a search

The details of the searching anagram do need to be kept under continual vigilance given the incentive for individual app owners to achieve high search listings. For example, the Apple App Store considers keywords (within the app title and app description), the number of app downloads and user ratings. These can be manipulated by App owners to achieve higher ratings, resulting in results lists than can look a little odd. If this happens too much users can loose confidence in the search, ultimately driving down use.

Offer search suggestions.

Another area where the searches are doing well is where they offer suggestions based upon terms entered, although not all, e.g BlackBerry App World do this. An example of this is seeking the game "Flight control" on the iPhone, it is offered as a suggestion as soon as the user keys "fli". This is really helpful.

Search suggestions based on name minimise user effort

The feature works on application name, so an interesting next step would be to incorporate some greater sophistication into this, for example displaying all apps related to trains, whether in the title or not, when the word "train" is entered. This would need careful handling so as not to disrupt the existing feature, but it would be useful.

Results lists

Display concise and relevant information on each result.

People do not like to scroll through lots pages of results, whether sitting at the PC or on the mobile handset, so keeping each result concise is important. They also like to get as much information from the results list as possible so that they don't have to go to other pages to find out whether the app is interesting.

Price, title, image and user rating are all important, but the app developer name has little meaning for users and is a waste of precious space

The **name** of the application is obviously important so users can recognise an app they already know. Beyond this a meaningful name that will not require a further click to understand will encourage use.

A **graphic** is also important in attracting attention and also telling the user something about the app. It doesn't need to be an accurate representation, but the graphic may give a clue as to whether we are dealing with a game, travel or a business app.

User ratings are helpful in making an assessment of likely quality and of course cost is always a factor.

Contextual information on the **type of application** is also useful**.** Searchers will not have an understanding of its categorisation afforded by navigating through a menu structure. Coming back to the flight example (see previous page), without digging further, they are left unsure whether they are looking at games, information services or another type of application.

Showing the category rather than app developer name is important for a search as the user has not seen contextual information afforded by navigation through a series of menus

Current App store designs typically support most of these, but there is some divergence beyond these, for example the Apple App store prominently displays the publisher name. It is unclear what value this has for most potential purchasers.

Vertical space is a real limitation, but **summary information** about the app may help to overcome this. The example image on the right includes a search result for "Wertago," includes the meaningful strapline "The mobile app for nightlife" rather than a publisher name is a step in the right direction here.

The lower result is more useful as it provides a short description of the app rather than merely stating publisher name

Continue to display the search term within the field.

This allows for easy adaptation of approach if the results aren't what's expected. This enables them to adjust the existing term (spelling errors being common) or to add another term if the search needs to be more focused.

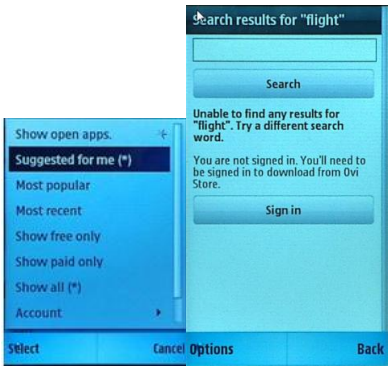
Both the Nokia Ovi store and the BlackBerry App World support this.

Retaining the search time allows for easy amendment

Use a results sensible order.

Relevancy order is typically expected and widely supported within app stores.

The Nokia Ovi store also offers the ability to sort the results, for example by popularity and to filter by free and paid apps. This is an interesting development, although this a little unwieldy due to the need to open a further menu to access the feature. The feature also is not ideal as there is little sense of continuity between the original results and the menu destination (in the example "Show free only").



Ovi results can be sorted, but the feature is somewhat hidden

Detailed app information

Provide a prominent link back to the search results.

We know that people tend to put a search in and see what they get, precision isn't their first priority in searching.

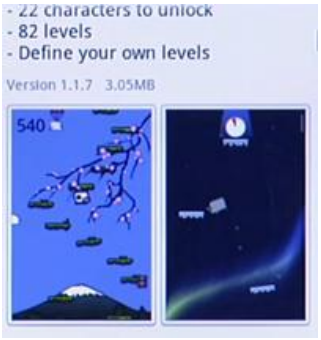
If the application isn't what is expected or isn't appealing then the user needs to get back to the search results as quickly as possible. A prominent on-screen option is necessary to do this. This also needs to be large enough for easy selection.

A prominent link back to the results should be provided

Include screen shots within the detailed information.

Example screens are particularly helpful in helping users to make a judgement as to whether an application is going to be worth downloading. They show rather than describe the application. They are also much more likely to be seen by a user scanning through the page as an image of the application is going to be inherently more attractive to the eye than a paragraph of text.

While very useful, they are not supported in all app stores.



Screen shots help users see what the app is really like

Don't overdo the detailed description.

People come to this page to understand the detail, but it still needs to be concise and structured for scanning to ensure its not off-putting. If it consists of long paragraphs then they are unlikely to be read in full. This means they shouldn't be too wordy, and use bullet points and sub headings to grab attention.

Even when long, descriptions often miss out important details, for example does the app need the Internet to function? This can make a lot of difference to someone likely to use it on an underground train.

The Related Apps feature in the Nokia Ovi store is a useful method of helping users who have found an application, which isn't quite right what's needed, although in that particular instance, the relationship isn't always very clear, which can undermine user perceptions of such a feature.

Related apps can be very interesting, although the relationship can be unclear

Provide an obvious onward step to download.

Once the value of the app is understood, users want to download it immediately with the minimum of fuss. The option needs to be prominent and readily selected.

This is an area where the Ovi store is more effective than the Apple App store, as the Download button on the former is large and easier to select than the Install button on the latter.

The Download option in the Ovi store is prominent and easy to select

Other ways of tackling the problem

While search is going to be the most familiar of us, there is some interesting work being done to help surface relevant applications within stores. Much of this has focused on the Apple app store, as this is the largest, but other stores are likely to experience similar problems and benefit from similar solutions as they grow.

The area getting most attention at the moment is the **formulation of search algorithms**, whereby search result order is determined by analysis of the incidence of the search term within the app title and description, the number of app downloads and user ratings. This work is undoubtedly required, although even a well-worked continually reviewed algorithm is unlikely to be the entire solution. Similarly the mechanisms for ordering apps within menus (in particular the top 25 apps within the Apple app store) require continuous monitoring to ensure that the order of the top ranked apps are not manipulated to the detriment of users.

The **tag cloud** within the Palm Ap Catalog is an interesting idea in this respect, building on an increasingly familiar model from the Internet. As all Palm apps are tagged, the user is provided with an alternative categorisation which provides more information which better good use of precious screen space than a vertical listing of categories.

The use of different font sizes conveys more information about what is available within that category than a simple title heading. It's an interesting idea.

The number of Palm apps is currently low, so it's unclear at this stage how much it will help when that grows. It is one that is worth keeping an eye on in the future.

The tag cloud provides more information about a category (through size) and displays more categories per page

Recommendations by trusted sources also highlight interesting apps. The popularity of app stores and the problems in discovering content have led to a number of sources becoming available outside the store.

The Nokia Ovi store already has a Recommended feature within the store, although the basis for selection is unclear. Third party recommendation sites are appearing in increasing numbers, for example AppShopper and AppGems, both of which provided their own listings. A perceived expert (Macworld in the case of App Gems) can help users sift out the good from the bad.

Recommendations listings can point towards better applications

Recommendations, **based on app use** also offers something more personal. This approach is relatively common on the Internet through sites such as Amazon. These are not always useful as one-off purchases and purchases for other people can significantly decrease their value. The personal nature of the mobile phone may be better suited to useful recommendations. Apple recently announced the expansion of the Genius music recommendation software to also cover Apps[6]. This is interesting move as it builds on any user experience of the existing feature. A proposed design on the right also seems to indicate the rationale for the recommendation, although it would further investigation would be required to understand how well the approach has been applied to a new domain.

Genius was developed to recommend music but is coming to the App store

Conclusion

Browsing will always need to be fully supported in app stores, but focusing on it is not enough. Alternatives to searching and browsing are being developed, but the familiarity of searching means that it is going to become increasingly important within app stores. Some good things are evident, but search design for app stores is likely to become more prominent and demand ongoing attention.

[6] http://events.apple.com.edgesuite.net/0909oijasdv/event/index.html?internal=ijalrmacu

About ExperienceLab

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