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The rise of the App: a PSI opportunity?

Author: Dr. Paul Miller

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About the Author

Paul Miller is an independent consultant, focused upon helping clients to realise the benefits of emerging trends such as Cloud Computing and the Semantic Web. Previous positions have included a senior role at UK technology company Talis, and the post of Director at the Common Information Environment, a consortium of UK public sector organisations including the BBC, the British Library, the Joint Information Systems Committee (JISC) and the National Health Service (NHS). He has served in a variety of advisory and monitoring capacities, including the Executive Committees of the Dublin Core Metadata Initiative (DCMI) and Consortium for the Computer Interchange of Museum Information (CIMI).

Paul writes for ZDNet on the Semantic Web, and routinely presents and chairs panels at industry events. He holds a Doctorate in Archaeology from the University of York.

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1   Executive Summary

The arrival of Apple's iPhone was largely responsible for a remarkable explosion in the development and use of small downloadable programs called Apps. Over 300,000 apps for Apple's devices have been downloaded more than 6.5 billion times, and competitors such as Google, Microsoft, RIM (makers of the Blackberry) and Nokia are racing to catch up.

Data sourced from public bodies plays some role in a growing number of apps, assisting citizens in everything from checking the weather and locating their nearest recycling point or bus stop, to reporting graffiti and faulty street lights. In a number of cases, government agencies and departments are going so far as to commission their own apps, focussed solely upon delivering *their* data to end users. Elsewhere, the data are being accessed by third party developers, and integrated into apps that might also fulfil non-government functions.

The App market is at an early stage in its evolution and, despite media stories of fortunes to be made, the majority of apps remain free or extremely cheap to download. With growing numbers of people able to access these apps, there are clear opportunities for using them to enhance the delivery of public services.

More analysis is required in order to understand the relative merits of commissioning single (or limited) use apps as opposed to disseminating data broadly (and often freely) in order to encourage its use in as many contexts as possible.

2   Introduction

Lightweight downloadable applications, or apps, do everything from identify songs playing on the radio to submitting the weekly order for your grocery shopping. They are a key aspect of the dramatic shift that the iPhone and similar devices have brought to the mobile phone market. Always on, always close at hand, and typically aware of where they - and you - are in the world, the current generation of smartphone offers a widely distributed opportunity that developers have been quick to exploit.

Data from the public sector is used in a number of these apps, but where might the real opportunities lie... and for how long?

3   Apps and App Stores

With Asymco reporting[1] around 17 million downloads from Apple's App Store *every single day* and revenue estimates for the store of almost $2bn this year, the humble app has come a long way in a very short time.
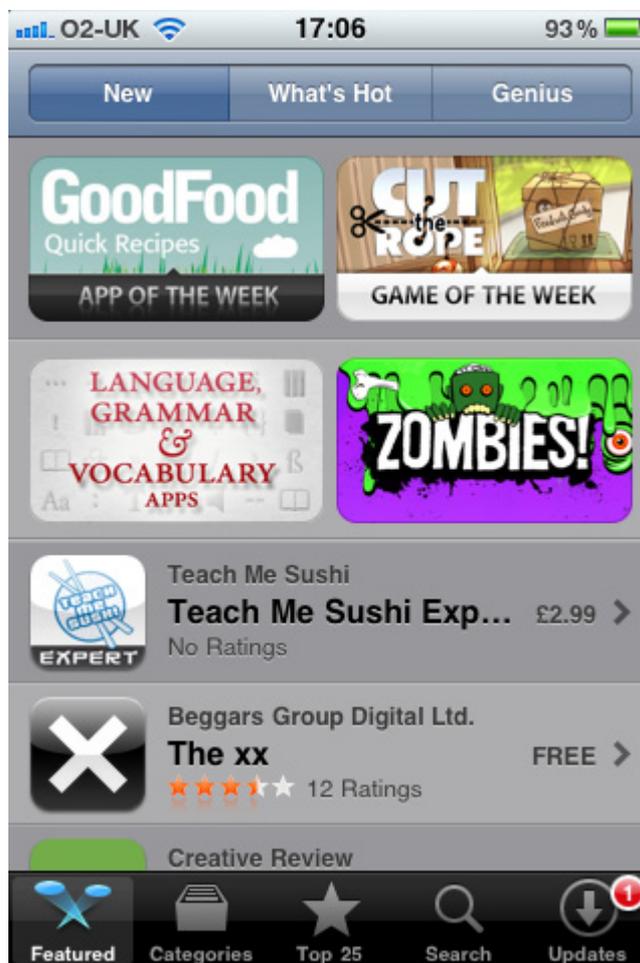
Apple's App Store, viewed on an iPhone

The unveiling of Apple's iPhone in January 2007 was remarkable in many ways, shifting control decisively from the network operators to the handset manufacturers, and sparking a wave of innovation around user interface and hardware design. But it was the launch of the iPhone Software Development Kit (SDK) in February 2008, and the subsequent opening of the App Store in July the same year that created opportunities for a global community of developers to quickly and easily reach - and sell to - an audience of millions. By the end of August 2010, Apple was able to report that over 250,000 apps were available for download. Just over a month later, figures from Mobclix suggest 300,000 apps are now available[2] in the US version of the App Store, with just under one third (94,147) of those being free of charge.

Although there is a *very* long tail, with a relatively small number of hits, these apps together account for over 6.5 billion downloads. A small number of developers got very rich, very quickly, with stories of their success leading yet more developers to embrace the platform.

Apple certainly did not invent the concept of the app, and there were large numbers of installable third-party programs available for earlier Personal Digital Assistants (PDAs) and smartphones from companies such as Psion and Palm. Devices running Microsoft's various mobile operating systems were also able to install and run software to extend the device's capabilities, but in each case the process of finding, buying and installing these programs never became streamlined enough for anything like mass market adoption.

Apple succeeded at a level never achieved by these earlier attempts for a number of reasons, the most important of which was undoubtedly the creation of a seamless and simple end-to-end process, backed by the company's marketing prowess. The App Store was accessible from the device itself. The App Store contained *everything*, whereas many of the programs sold for earlier devices required buyers to visit the developer's web site to purchase. App Store apps could be downloaded with a click, and updated painlessly as new features became available. For paid apps, Apple handled the process of storing credit card details and deducting payment, passing 70% of every sale along to the developer. The whole process was typical Apple; slick, managed, simple, and very good at parting consumers from their money.

Although still not as large as Apple's effort, app stores have quickly emerged for most major phone operating systems. RIM's Blackberry App World launched in April 2009, and contained over 9,000 apps by August 2010. Nokia, still the world's biggest producer of mobile phones, launched the Ovi Store in May 2009 and this grew to hold 27,000 apps by September 2010. Microsoft's Windows Marketplace for Mobile launched in October 2009, but only contained 1,000 apps by June 2010. Close behind Apple in terms of scale is the Android Market. Launched in October 2008, it held over 140,000 apps by October 2010, and the relative lack of control over the submission process probably means that its growth will soon outpace that of Apple's store. Whilst the iPhone marked the beginning of a shift away from the network providers' tight control over user experience, there are some indications that Google's Android operating system is enabling some rebalancing to occur. Several North American networks have been criticised for loading phones with their own applications prior to sale, and Verizon has announced plans[3] to promote their own V CAST store on Android phones they sell; in preference to the generic Android Market that every other Android phone sees.

Across all of these app stores, games and other forms of entertainment continue to dominate[4], but the market for other classes of application remains strong. Apps that leverage the devices' ability to determine their own location are particularly healthy, and open source mapping from the OpenStreetMap project and its CloudMade commercial spin-off underpins a growing number of location-based applications in ways that data from Europe's national mapping agencies do not.
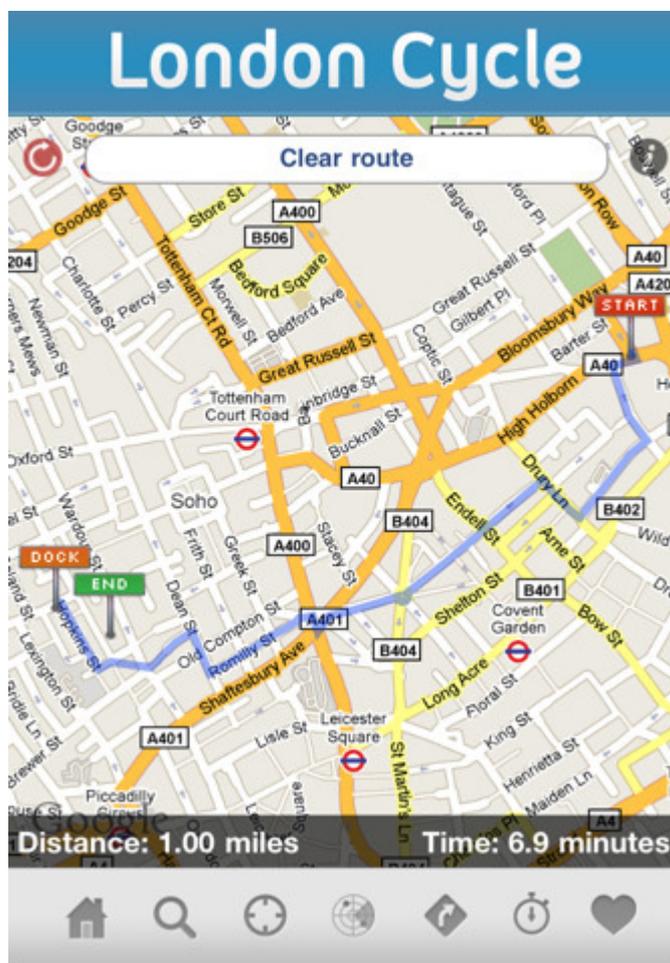
London Cycle, a free iPhone app that combines OpenStreetMap data, CloudMade's routing algorithms and bike availability data from Transport for London

4   PSI

Since the ratification of the PSI Directive[5] back in 2003, public sector institutions across Europe have been bound by a set of rules regulating the manner in which data should be made available to third parties. Further, Member States are encouraged to move beyond the basic rules to adopt open data policies and actively facilitate reuse of information that they hold. More recently, openness and transparency have caught the imagination of policy

makers and public alike, resulting in unprecedented releases of public sector data through programmes such as the UK Government's data.gov.uk.

5   Government Apps today
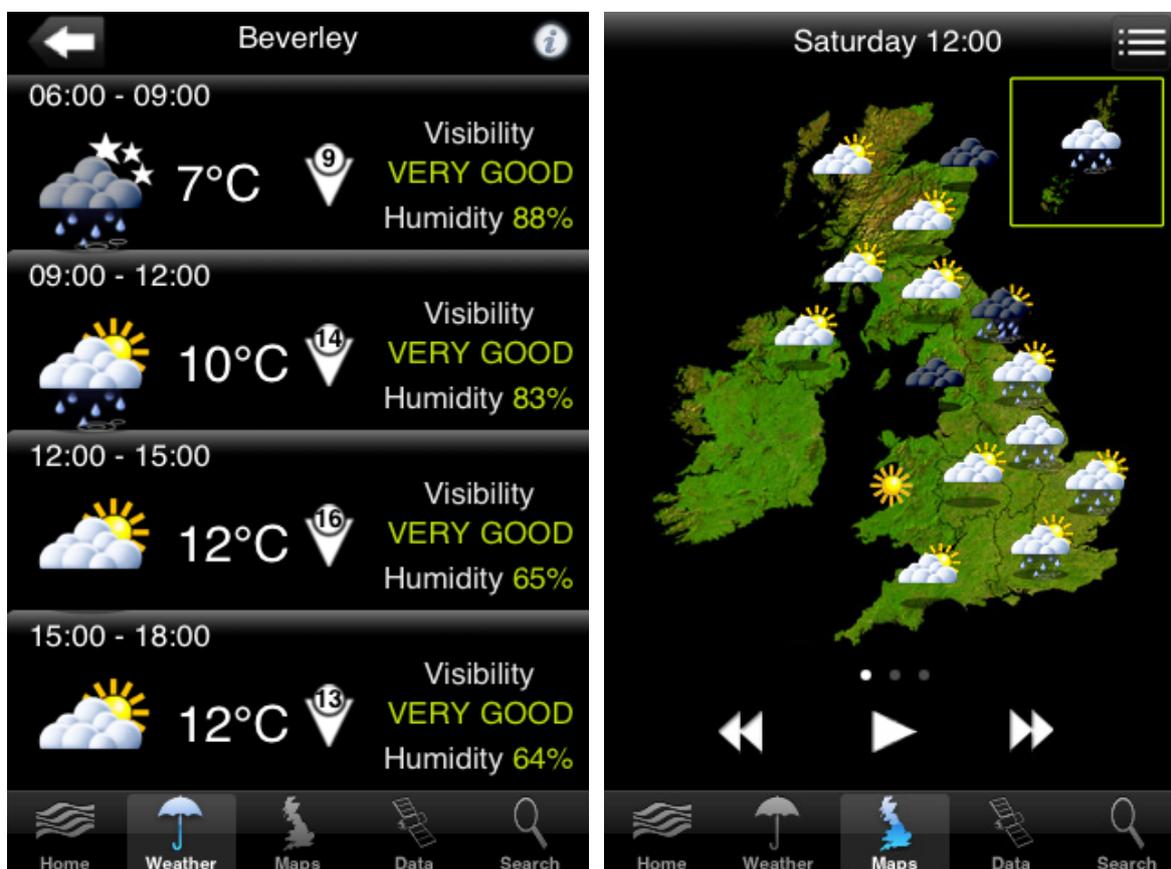
A free weather forecasting app from the UK's Met Office

A wide range of apps exist today, available across the various mobile platforms discussed above. Some of these, like the rich application from the UK's Met Office, are built by commercial developers with the full backing of the data-holding agency concerned. Others, like Find Pharmacies, are built by third party developers to utilise data that has formally been released for public reuse.
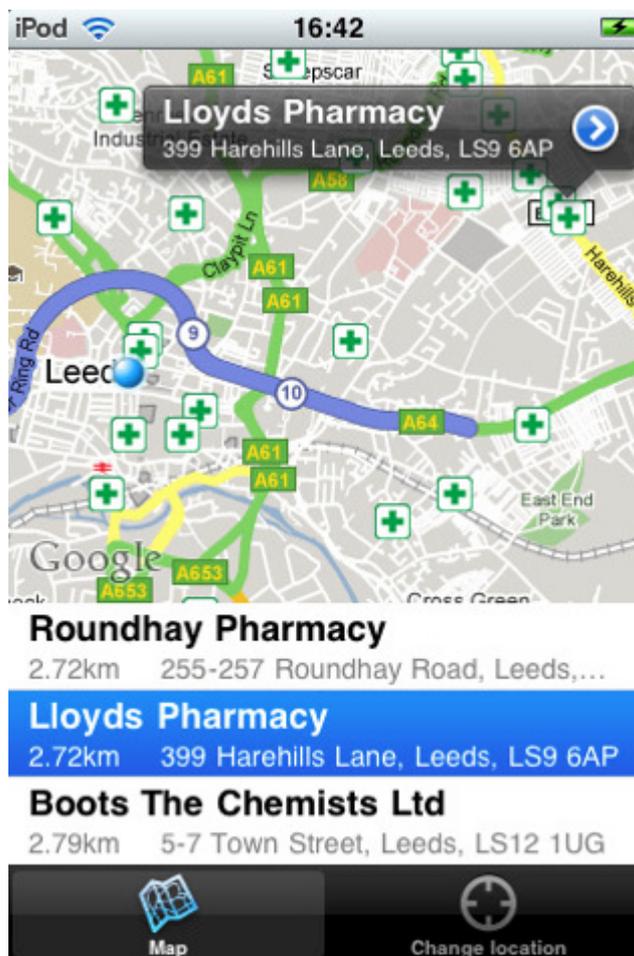
Find Pharmacies, a £0.59 app that uses data from the Government's Health & Social Care Information Centre to locate nearby pharmacies

A third class of app also exists, in which data are acquired by scraping web pages - often without either explicit or implicit permission from the data owner. The Belgian BETrains project *may* represent an app of this type.

The Android app from the Belgian BETrains project

The vast majority of these apps are built to exploit a single data set, to meet the needs of a single agency, or to cover a single geographic area. Unusual amongst the apps available today was Find Recycling, a £0.59 iPhone app that locates recycling sites across fourteen European states.

In the rush to embrace location-based services and mobile devices, it's clear that 'coolness' and competition with neighbouring regions sometimes takes precedence over value for money or utility to the citizen. An app that can find council libraries and swimming pools may be interesting, but the swimming pool data might be more *useful* as part of a generic app that finds all sorts of leisure activities in the surrounding area; whether run by the public sector or not. Although a growing number of local authorities in the UK and elsewhere are having apps produced on their behalf, it remains unclear what utility these have.

6   Government or the Market?

PSI, formally released and made available to developers via a resource like data.gov.uk, offers rich potential to builders of apps. Some of those apps, like those highlighted here, will be intended almost exclusively to make a specific PSI resource accessible and useful. Far more, potentially, will be built for some other purpose entirely, and will simply draw upon one or more PSI resources to add value and context. A commercial restaurant booking app, for example, might be full of restaurant descriptions from the establishments themselves, and reviews from customers, but access PSI environmental health records for the restaurants and perhaps PSI information on railway stations and bus stops near each location. The *point*

is not PSI, but PSI delivers clear value in making the app better, richer, and more useful. In supporting this wider universe of possibilities, PSI must be easily accessible, unencumbered by arcane licensing restrictions, and packaged in such a way as to be easily engaged with by mainstream app developers. Data will need to be available either free of charge, or for a fee small enough that developers can include it in the price charged to their customers; customers who are on average paying just €2 to download a non-game app[6].

Commercial developers are currently making money writing apps for a wide range of public sector clients. In those cases, the app is typically given away for free, which raises longer term questions about the wisdom of such an approach. The Met Office app, for example, is rich, fully-featured, authoritative... and free. As such, it is difficult for a third party to create a weather app for the UK (whether based upon Met Office data or some other source), charge for it, and expect to sell in significant quantities. If, on the other hand, the Met Office had simply made its data easily accessible, a range of similar apps might have emerged and competed for attention on the basis of cost, features, etc. For those unwilling to pay for one of these apps, the Met Office public service weather forecast would still have been freely accessible via their web site, and via partners such as the BBC. In areas where the responsible public sector body has not commissioned production of a dedicated app, we have already seen third party developers willing to step in and make freely available PSI more useful to end users; end users who *are* prepared to pay for this added value.

7   Potential for Growth

Recent research[7] from GigaOM Pro suggests that the market for apps on tablet devices such as the iPad will grow from generating $183 million this year to $8.2 billion in 2015. Extrapolated to include apps on smaller devices such as the iPhone and Blackberry, growth in this market is dramatic and continuing. PSI-based apps are a tiny proportion of that whole, but growing willingness to download and install apps (the Pew Internet & American Life Project suggests[8] that 24% of Americans use apps on their mobile phone today) and growing awareness of 'open' Government data are coming together to position the app as a compelling way to deliver real value to millions of citizens across Europe.

Public sector organisations across all the member states need to balance projection of their own brand (through developing or commissioning dedicated but narrow apps) against less high profile delivery of (perhaps) greater value to citizens by making their data available in as many apps by as many developers as possible. Given the extent to which local, regional and national government impinges upon the environment around us, PSI could and should play a role in almost every location-based app, enriching, deepening, broadening, and bringing

context to everything from planning a night out to teaching young people about the world around them. Yet the fragmented and low visibility nature of so much public data means this is far from being true today; it is simply easier to turn to a relatively high profile data source such as OpenStreetMap, or to a repository of facts such as Freebase, InfoChimps, or Factual rather than deal with the different policies, procedures and means of accessing PSI from tens or hundreds of public bodies. The rise of centralised gateways such as data.gov.uk may go some way to countering this difficulty, as they offer visibility, critical mass, developer-friendly means of access, and consistent licensing terms. A further approach may be for those responsible for PSI to actively approach many of the existing repositories in order to ensure that authoritative PSI data is visible and available alongside the other data already stored there.

8   Will HTML 5 burst the bubble?

Apps in their current form are very much a reaction to the current state of both mobile hardware and the web itself. The web community is hard at work finalising a new set of standards known as HTML 5. Although not yet ratified, HTML 5 is likely to give ordinary web browsers like Safari, Chrome, Opera, Firefox and Internet Explorer the ability to do many of the things that make apps distinctive today. Google's Chrome browser, for example, already uses unratified features in HTML 5 to access and act upon information[9] about your computer's physical location.

HTML 5, and the changes that it will bring, are likely to lead to some evolution in the app stores that Apple and others have worked so hard to build. These stores may still deliver value as curated concentrations of apps, but once many of the capabilities of an app become accessible across the open web, the walled garden - controlled and revenue generating - nature of an app store will become harder to enforce in its current form.

The delivery of utility to end users, and the potential for PSI to deliver public value as part of that, remains unchanged by this possible technological shift.

9   Conclusion

Public bodies across Europe are already embracing the growth of apps, commissioning apps of their own, and making data available to third parties. Provision of data should presumably be seen as part of broader PSI or open data initiatives within the organisation, but it is far from clear that this is the case. App development is rarely considered within the context of PSI, and recent reports[10] from the BBC back the perception that it is far more likely to be an

(expensive) project from the Marketing Department than a strategic extension of the organisation's service delivery reach.

Integrated into the PSI and open data priorities of an organisation, apps offer a compelling and - potentially - cost-effective means of delivering real value to a wide range of stakeholders. As we move past the enthusiasm of early adopters and brand managers, there are clear opportunities to ensure that PSI lies at the heart of a plethora of apps, delivering real and sustainable value to citizens across Europe.

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[1] http://www.asymco.com/2010/09/05/ios-users-downloading-17-6-million-appsday/
[2] http://venturebeat.com/2010/10/16/apples-app-store-crosses-300000-apps/
[3] http://techcrunch.com/2010/09/21/verizon-v-cast-apps/
[4] http://radar.oreilly.com/2009/11/games-top-the-charts-iphone-android-markets.html
[5] http://ec.europa.eu/information_society/policy/psi/actions_eu/policy_actions/index_en.htm
[6] http://148apps.biz/app-store-metrics/
[7] http://pro.gigaom.com/2010/03/forecast-web-tablet-app-sales/
[8] http://pewinternet.org/~/media//Files/Reports/2010/PIP_Nielsen%20Apps%20Report.pdf
[9] http://www.readwriteweb.com/archives/google_chrome_becomes_location_aware.php
[10] http://www.bbc.co.uk/blogs/thereporters/rorycellanjones/2010/07/government_apps_a_case_for_the.html