Elementary, *my dear Freya*

Elementary OS started out as a collection of attractive icons, but now a small team has taken the ethos and turned it into a completely bespoke top ten distro… Russell Barnes investigates.

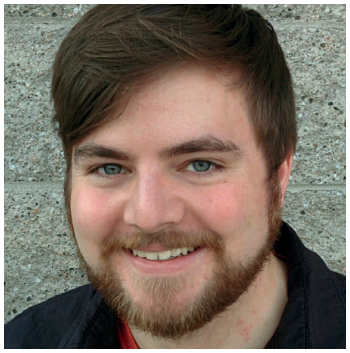
In many respects elementary OS is the perfect microcosm of the open source scene. It's designed and built by a disparate team working on a project considerably greater than its parts. Unlike many modern Linux distros, though, Elementary OS isn't a hodgepodge of different elements drawn in from different corners of the ecosystem. While it's built on Ubuntu's solid back-end, every other aspect of the distro is entirely custom made. Everything from the desktop environment to the file manager, the application launcher and even many of the applications themselves have been developed especially for Elementary OS.

As we discover from talking to the core development team, this is probably why it's being embraced by the open source community. But as we also find out, Elementary OS's biggest market isn't Linux at all and as such, they're not afraid to sidestep a few open source norms in their quest to reach the top of the distro pile…

The core elementary OS team

They're separated by thousands of miles, but the core elementary OS team is a tight-knit bunch…

Name: Daniel Foré
Location: Sacramento, California
Career: Design and marketing manager
Project role: Founder and UX designer
Quote: *"I started the project drawing icons. My role has evolved from visual design to UX design."*



Name: Cassidy James
Location: Denver, Colorado
Employment: Front-end web dev and UX designer at System 76
Project role: Director of Operations & UX Designer
Quote: *"I manage the legal and financial side… and help manage the community and guide the project."*

Name: Cody Garver
Location: Jackson, Mississippi
Career: IT Consultant for SMBs
Project role: Project and Release Manager
Quote: *"I do the packaging and the ISO builds. I help out with the road maps and bug triage among other things."*

Why do you think the Linux community embraced Elementary OS in the way it did?

Cody Garver: I think it's pretty clear that Elementary as a project has a strong sense of design and a focus on simplicity. So the strong reaction to it shows there's an appreciation of design in open source software. The nature of open source development is that anyone can make anything and just give it away. This type of creation has typically not had a particularly strong design process. There's definitely a growing community of users who enjoy something that is well designed and open source.

Were you surprised when Luna (Elementary OS version 0.2, released in August 2013) took off the way it did?

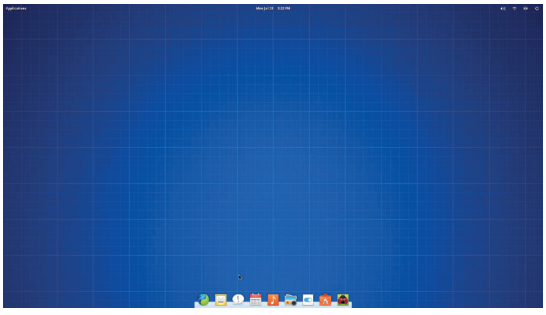
Daniel Foré: Personally, I was pleasantly surprised. I think it goes to show that an exceptional user experience can be something that differentiates you regardless of whether you're an open source or commercial project – having a good user experience is something that users want.

Cassidy James: We saw an opportunity in the open source space for a top-to-bottom solution. With most Linux-based distros someone else builds the environment and other people integrate the apps, the packages and so on... For us, not only do we do the integration, but we build all the apps and we build the desktop environment. Having that approach is something that's really pushed us ahead. You have to expect a certain level of acceptance when you're doing something so different.

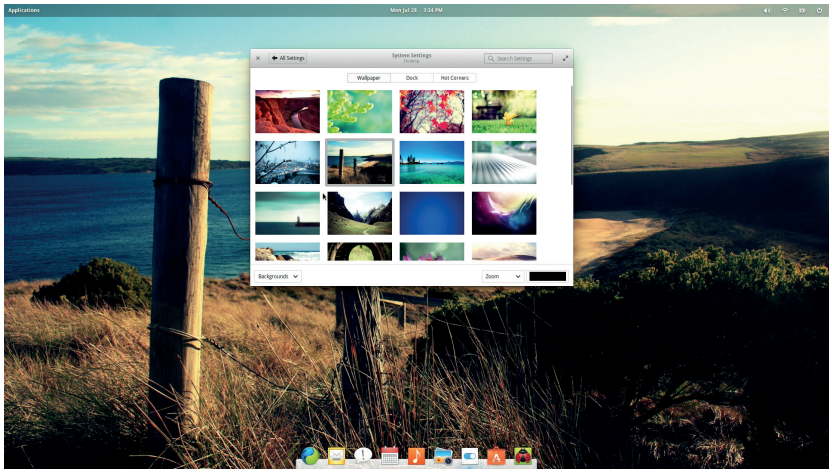
So who, in your opinion, is downloading Elementary OS? Are we talking about creative types, beginners or is it a broad cross-section?

CJ: I think the majority of the downloads come from non-Linux users. They're mostly from Windows, several from OS X. I think there's a dissatisfaction with proprietary operating systems out there like Windows 8 and OS X. People are looking for an alternative and the simplicity of Elementary draws them in.

Did you see a bump in the numbers when Windows 8 stumbled so spectacularly on the start line or when Windows XP shut-up shop?



Freya's bare desktop has a cleaner look to it than that of most Linux distros.



Freya's top panel is now mildly intelligent, deciding on the fly if it needs to be visible at all

CG: I know there was a lot of chatter on social media sharing Elementary: "I'm switching my/my grandparents computer from XP to elementary so they can get security updates". Or "My school is installing Elementary on the lab computers". We've got a lot of those kinds of stories shared with us since then, which is cool.

DF: Someone shared a photo on Google+ of a prep school in China and kids using Elementary on computers there. That was amazing, and it's really validating. We're making something that not only friends and family are going to use, but that people around the world and are passionate about. It's an incredible feeling.

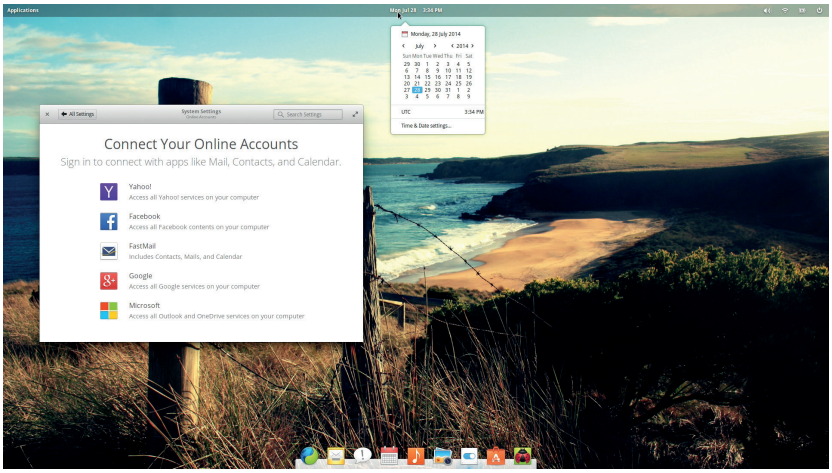
CJ: Some of the most rewarding stories are the ones related to the accessibility of computing in general. We get Tweets that say things like: "My mum was using Windows and was having a hard time doing what she wanted... Now she can get on Facebook and send email." Where technology before was a blocker, we're enabling people to communicate, connect and do things.

> **"Where technology before was a blocker, we're enabling people to communicate and do things."**

What about the other side of the coin? Luna did a lot of things really well, especially in terms of user experience, but what areas were you less pleased with that you're addressing with Freya in September?

CG: File management wasn't optimal. We suffered from a lack of developers in that space. It was a bit crashy but we've rectified it since then, and I'm really excited about it.

CJ: In a lot of ways Luna was the first release for a lot of those apps. It was the first release of our desktop environment too. There were a lot of unexpected things and users threw a lot of cases at us that we hadn't considered throughout the development cycle. As with any new software the first release wasn't jam-packed with features, so we've been working on putting in a lot of new features and dealing with those issues that we hadn't encountered ourselves.



The addition of online accounts will help integrate popular web apps into the Elementary OS experience.

DF: Another of our weaker areas with Luna was networking. There were some issues there that we've gone through and done a lot of work on. One of the most popular requests was Google Calendar sync in our calendar app, so that's another thing we've been working on. There are literally hundreds of issues we've closed during the current release cycle that were reported by users.

Does it pile on the pressure? You're ranked in the top 10 on DIstrowatch now... are you feeling the heat?

CG: No, but now you mention it I feel like I should!

DF: There's so much that we have in our vision of where we want to be, that we're not really concerned with 'how are we possibly going to continue to compete?'. We know where we're going and we've got such a huge plan for the future that it should naturally keep us there and keep us pushing towards the top.

CJ: The only thing I get nervous about is the next release, because I look at all the bugs we closed in the current one and I wonder how can we find anyone else or ask anyone to complete something like that, yet again.

Has the development process changed since the last release?

DF: The end of the Luna cycle was about learning how to work together as a team and focus on our goals. Before then everyone was doing their own thing, and at the end we'd try to tie them all together. Now other developers are more likely to be aware about what everyone else is doing.

CG: We do 100% code reviews now too. Any code that changes is peer-reviewed by other members of the team. It slows things down a little, but we find we're clearing up after ourselves much less now.

When you released Luna, it came with the option to donate. How was that received by the community, and did it work for you as a source of income for the project?

CJ: Yeah, it's worked really well for us. I think there's this cultural thing that's been popularised by the 'pay what you want' approach for software, like the Humble Bundles. With digital software you don't have to pay significants amounts of money for distribution. If you were sending out physical CDs, that's expensive, but as something that's available for free or cheap – pay what you want – people really latched onto that and enjoyed it. We set a default payment of $10 and people could change it to whatever they want, but several of those payments come through at the default amount.

I think it's exciting that you can be creating open source software and producing revenue at the same time. People think it's worth paying for.

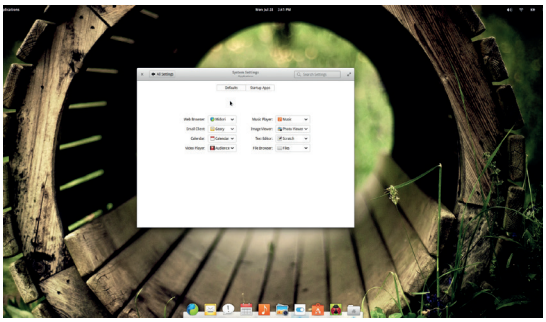
We had 1.5 million downloads of Luna alone. That's exciting. I've watched payments come in and a lot of times people either pay £10 or they'll pay $1 or $2. Most download for free, but if they're going to pay it's either a small payment or the default $10.

DF: None of us really know what to expect as far as numbers go. There are so many people in the world it could be anything, or it could be nothing. I had no idea what to expect. I'm looking at the site we have up and it's showing 1.45 million. That's based on figures we can accurately track – how many people have directly downloaded from SourceForge. Then we have a percentage of how many people decided to download from torrents. We can only estimate downloads from that. In theory it could be far more – we can't track downloads from outside either direct or by torrent.

With anything between 1.5 to 3 million downloads it doesn't take much napkin mathematics to realise you've made a reasonable amount of money from Luna in the last twelve months. What have you been spending it on and could elementary become your full-time job?

CG: We obviously incur operating costs like running servers, paying for the website, but beyond that we just have small stuff like office supplies and costs for doing in-house shipping of merchandise. Aside from those kinds of operating costs all the money is being invested back into fixing elementary OS with bug bounties. We've been to a few hackathons and meetings too.

CJ: No one takes home a pay cheque. It's all directed straight to goods and services to benefit the project.



The core software offering has expanded and the team have finally introduced the ability to set applications to start with the system.

In terms of it becoming a full-time job… that's a direction we'd like to go in, but currently the money we're making doesn't support full-time employment. We want to work towards that and we want to put money into open source developers' hands. I think getting involved in doing bounties has been a huge first step for that.

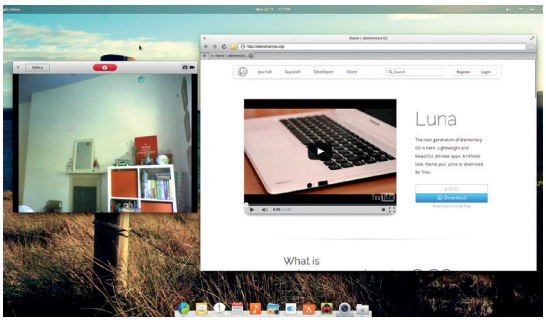
We've posted over $8,000 in bounties and so far we've paid out $2,500 of that. It's been a tremendous help, not only in attracting new developers, but keeping our current developers engaged and making sure they feel appreciated. It's hard work and a lot of what we do is really boring stuff that nobody's ever going to know we did. Having that incentive makes it better, because you say "Hey, this is hard work, it's not a lot, but buy yourself something nice". It's a small token of our gratitude.

DF: Our average bounty size at **www.bountysource.com** has grown with time. We started out offering $5, $10 and $15 dollar bounties on things, but now we have several at $100 or more for single bugs. As we generate more income through people donating or paying for the download, that's an area we're going to keep investing more and more money into.

You're currently working towards the latest release, called Freya, of Elementary OS. Since your focus is on simplicity and cleanliness, have you been finding it hard to add features without adding mess and bloat?

DF: That's one thing we talked about a lot when we started working on the new search back-end. As we introduce new features we want to make sure that – no matter what happens – we don't ever encroach on that original experience of launching apps really quickly. It's the primary purpose of the UI after all. While we want to introduce interesting and useful little features, if it gets in the way of the primary purpose we don't want to add it.

Our app launcher – *Slingshot* – has a new back-end for its search view. For now that doesn't mean anything for users, but going forward it means we'll be able to add different kinds of plugins. We've added a calculator plugin, so you can just open *Slingshot* and do some math. Little convenient things like that. It will sort all your results by most used too, which is nice.



Snap, the new webcam app, couldn't be simpler, and while *Midori* wouldn't be our first choice for browsing, the team are investing heavily in its development.

The team put a lot of stock in Elementary as a brand.

CJ: We've got a new video app too, called *Audience*, a web camera app and a refreshed UI. We're introducing the ability for apps to use a dark theme, like the terminal or media-centric apps. And we're introducing HeaderBar. It's a new widget created in *GTK* that enables the applications title bar and tool bar to be just one line. It's space saving for things like notebooks especially.

DF: HeaderBar was something that was introduced in either *GTK* version 3.10 or 3.12. Typically you have this area above your toolbar that just shows the app's name, and that's it. You're adding 16 vertical pixels for this completely useless area. So it just enables us to compact that area and save that space. In general, *GTK* apps now are using what are called client-side decorations. That kind of goes hand in hand with HeaderBar. What that means on the themeing side is that the window borders are being drawn by *GTK* instead of a separate window manager. There's no tearing when you re-size, because it's part of the contents. Shadows look nicer. We get all the advantages of *GTK 3*-like transparencies, we can animate things – it's just really nice.

"We've posted over $8,000 in bounties and so far we've paid out $2,500 of that."

CG: We've also rebuilt our multitasking view in the window manager. We have a much more interactive and clearer distilled multitasking experience. It's really hard to describe it, but when you see it and use it it's just intuitive. You can move things around and it feels really good.

You mentioned earlier that you're finally bringing Google calendar synchronising to Elementary OS. Will you be offering similar online account integration elsewhere in Freya?

CJ: We are introducing an online accounts service so apps can tie into that, much like you see in Mobile, Ubuntu and OS X 10. We've added a firewall configuration, start-up apps configuration. Every time you boot up you can start your Twitter client or web browser, for example.

CG: We currently support Facebook, Google,

Collaboration made easy

How do the core developers manage to stay on the same page when they're all at least 1,000 miles apart?

Cody Garver: It's a necessary evil when you're working with open source. We have people in all different locations, timezones and languages. We've adapted really well because we're all of the age that we've grown up with the internet, so we make heavy use of it. We use tools like Launchpad to manage code, but we recently switched over to *Slack* [**www.slack.com**] from IRC – it's actually a pretty effective way of collaborating.

Cassidy James: One of the things that was important as we moved from Jupiter and into the Luna cycle was learning how to work remotely. We're still learning and evolving. It was just in this cycle that we started using *Slack* as opposed to IRC. It's been huge. In IRC we had to have all these different services to paste code snippets or share images and we built bots to log the channel and view history… things like that. All these things come built-in with *Slack* so we've been able to take a lot of tools and have them in one place.

Daniel Foré: One area we're still facing some challenges is in animation and motion design. I'm making prototypes in CSS and HTML and trying to hand those off to the dev team, but it can be hard when you're trying to do sound or motion and you're trying to design something like that remotely. You can't use your hands to gesticulate meaning.

Microsoft and FastMail, and there's work going on for general IMAP support. The idea is that apps on the desktop can plug in to the online accounts. You don't have to sign in to everything. It's perfect for things like Twitter clients and email clients.

There's clearly a lot of work going into Freya and there's a lot to be excited about, but do you agree with people who say you're being very protective by not publicly sharing your alpha builds?

CJ: Absolutely we have! There's this interesting thing with open source… because the code is open and available to everyone, people expect to be able to download and try it out every step of the way. Even with Luna we ran into this.

Even if we provided a preview to our developers and it would get leaked out to a publication or a website and they would review it as a finished product and say; "This is buggy, this didn't feel complete, such-and-such doesn't work well." Well of course not – it wasn't complete. It's really hard when you put so much time and effort into a product we want it to be the best representation of all our work, people judging it early can be a big problem.

It seems that brand management is very important to you, and that's the driving factor here, not secrecy.

DF: It really does comes down to brand management. When people hear Elementary OS or see our logo it needs to make them feel like this product is well thought out, it's stable and easy to understand. When people see others say 'hey, this is Elementary's next release and it's broken and unstable', then it really hurts our potential growth.

On the other side of the coin though, do you not worry that the lack of crowdsourcing and testing on the fly is hurting development in some way?

CJ: The people who contribute to Elementary on a regular basis and people who are new to contributing to Elementary can get in touch with the dev team and we can help them get started and give them access to pre-release versions so they can work on their apps.

If you're involved in development, or want to be involved in development and you're committed to it you'll definitely get the opportunity to run the pre-release software. It's mostly about people who are less involved and are just going to report everything we can see already. It creates a lot of extra bug triaging and creates a lot of extra work at our end.

CG: We know things are broken and we know what we're focussed on – it hurts our focus.

DF: Throughout Freya's cycle we've picked up quite a few new developers. I don't think the availability of an ISO test image really relates to the ability to hack on the source code at all. All the source code is publicly available. Running Elementary isn't really a requirement to build the apps in most cases, so a lot of people are doing dev work in Ubuntu or Arch or whatever before they're working with us with *Slack* or running these test images. People can contribute code without having ever run Elementary OS.

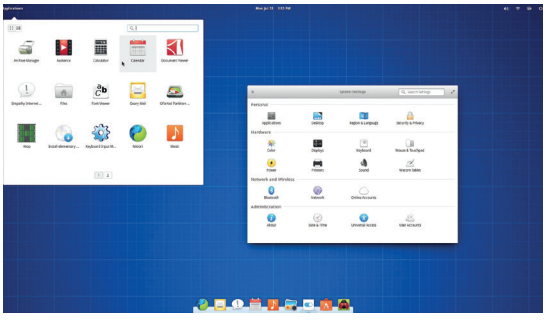
CJ: Release early, release often… we kind of do the opposite of that!

DF: I think it's the way that big commercial projects work. They may have a yearly release cycle, but they're not held to a specific date – it comes when it's ready. You expect a new Android every 6–12 months, or a new OS X every year, but they could be working on something really cool and don't deliver until it's ready.

Open source has had this other model of release on a really strict schedule – whatever's ready, just release it. That doesn't work as well for us, because when you're building an entire OS you're not going to be ready in just six months.

CG: It has to do with target market too. Typically open source software developers are releasing to other open source software developers, but like we said earlier, the majority of people downloading Elementary aren't coming from Linux.

We're seeing a different kind of consumer. Our consumers don't necessarily know how to deal with this stuff. We can't expect them to run through an unstable system and use commands at a terminal – we can't release a product like that.



The app launcher, *Slingshot*, is adding applications slowly but surely – software only gets included when it's ready.

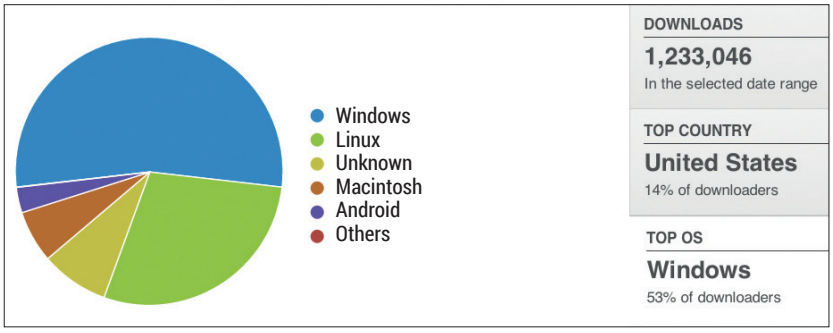
Hands-on with elementary OS Freya

How is the latest release shaping up?

There's no escaping the fact that Freya, like Luna before it, has taken its lead from Apple. While Apple has continued to build, add and augment its proprietary operating system until it's just as complex and bloated as Windows, Elementary has been incredibly sparing with extensions to Luna's lightweight mix of software and features.

This theme continues elsewhere with brilliant use of *GTK*'s HeaderBar. They haven't wasted a pixel in any open window, and it adds a new edge to Elementary's visual appeal and utility. By removing the title bar there's much less wasted vertical space, and that's sure to go down well with users in the mobile space.

This visual zen doesn't end there – it's also transformed the top panel too, which works particularly well when combined with one of the few new applications to appear in Freya, the *Audience* video player.



It came as quite a surprise to learn that most Elementary OS users aren't Linux users at all – the vast majority of Luna downloads come from Windows and Mac OS X.

Zen minimalism

Like everything else in Elementary OS, it's built from scratch in Vala and offers the barebones of media playback in a very modern, minimalist package. *Audience* has been in development since version 0.2 Luna and draws inspiration from online players like YouTube and Vimeo as opposed to standalone media applications. Using *GTK 3* for the UI and *GStreamer* for its back-end, *Audience* offers animated overlay controls and preview pop-up that lets you scan around to find the start of a scene.

Another new application for this release is *Snap*. As the name suggests it's a simple webcam application, very much in the style of OS X's *Photo Booth*. Like *Audience*, there's very little to say other than it allows users to quickly snap pictures, videos or screencast.

With these new applications the team are clearly fleshing out the core offering to ensure all the major bases are covered, but they're resisting community pressure to include third-party applications in the mix like *Birdy* and the popular podcast app, *Vocal*.

You certainly get a sense of a more mature Elementary from our early preview of Freya. Features are getting polished, the basic application offering is being refined and it's all happening on the reliable backbone of Ubuntu 14.04.

The only missing piece of the puzzle is *App Centre*. Development here, it seems, is going to take much more than one release cycle to flesh out, and it's clear the team plans to take a firmer grasp of the reins than your average package manager. While this is sure to upset more than a few in the community, as the team explain in the boxout below, they find unlimited freedom has a tendency to lead to a lesser user experience. We'll just grab the popcorn, retreat to a safe distance and let that last statement sink in.

"The team plan to take a firmer grasp of the reins than your average package maintainer."

With development timed to coincide with the release of *GTK 3.14*, it's very likely that Freya will see a final release during September. LV

The absence of App Centre

One of the big banner features people have been waiting for is *App Centre*, Elementary's bespoke app store. Its not happening this year, and here's why...

DF: Unfortunately it won't be in Freya. The thing about *App Centre* is that when you're looking at building a new app store the easiest part of that is writing a new client. Gnome has a really great client already. When you open up Gnome Software it looks new and shiny... but when you dig into it – all the content – is all the same content you had before in the old one. You're not really moving forward. We're still getting the same selection of apps written in a billion different toolkits with really horrible descriptions. Some of them are crashy and half complete – it's not curated at all.

The most difficult part in building a new app store is firstly a proper app submission process. That's something we talk about all the time. When we have third-party developers making cool apps like *Birdy* or **Vocal**, how do they get them to elementary OS users?

A big piece of making it successful is some kind of curation process. We need to have some kind of rules for apps that we present to users... some kind of standard. People in the open source community aren't going to be super-happy about that concept at first, but from our experience unlimited freedom leads to a lesser user experience in the end. Instead of browsing through a collection of all these really nice native apps that are presented well and integrated with the OS, you're just looking at everything everyone ever posted to the internet.

CJ: There was an app in the Ubuntu repos for quite a while called *PornView*. We used to use that as our example of how anything can get in there. *App Centre* is a big project and we think it's a very necessary one. It's just not something we'll be able to complete in just one release cycle.