

Bluedot Innovation aims for the enterprise

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Although Australian startup Bluedot Innovation counts SMBs among its customers, co-founder Filip Eldic said the intention has always been to develop a cloud platform that could location services to enterprises.

The startup was founded in late 2012, initially with the intent of developing a mobile tolling platform.

The idea was that a driver's smartphone would automatically recognise when they entered a tolled area and charge their credit card appropriately.

Bluedot faced two problems, Eldic said.

One is that tolling is a fairly slow-moving industry. The other was finding a way in which a smartphone's location could be tracked without killing the battery life.

"The only way to understand if you'd entered a precise location such as the entryway to a toll road was to use GPS on your phone," Eldic said.

"And if you use GPS all the time, such as with Google's turn-by-turn navigation, your battery is dead in about two to two-and-a-half hours."

Another approach would be to embed Bluetooth beacons, but that could prove problematic in the use case Bluedot was examining.

"You can't go dig up a road and try and plant beacons in there," Eldic said.

Bluedot developed a software system that still uses GPS but only periodically, and augments it with Wi-Fi detection, cell tower triangulation and the full range of sensors available on modern smartphones, such as gyroscopes, accelerometers and magnetometers.

"We fuse all of those into a management cycle, switching between every single available one in order to beat that trade-off between battery drain and precision," Eldic said.

“What that lets us do is run location services to their maximum precision without destroying the battery of the phone. In turn that lets us not only understand ‘has a phone entered a hundred metre wide location?’, but understand ‘has it entered a five metre wide location?’ And trigger any action when a phone enters that location.”

“We realised we developed effectively a way to improve the precision of location services by a factor of 20x without increasing the battery drain or requiring any hardware to be installed,” Eldic said.

“Effectively we’ve minimised the amount of time the GPS chipset has to be active while still ensuring that at any point when we need it, it will be on and it will be able to precisely determine where a phone is.”

Eldic said that the team “had a bit of a moment” where they decided they were doing themselves a disservice by focussing on a niche market like tolling.

“We made a very quick pivot and effectively decided to become an R&D group, B2B licensor of disruptive location services software.”

To date Bluedot has raised just shy of \$4 million in funding.

That funding has been used to bring together a team that could build the location platform and its SDK.

The startup has around a dozen engineers, as well as the co-founders, a marketing officer and a CFO (former PayPal CFO David Jaques).

“The skill set within the team ranges from ex-CSIRO to GIS specialists with PhDs in GIS,” said CTO Balendran Thavarajah.

From the start, Eldic said, Bluedot wasn’t interested in just developing an MVP and getting it to market as quickly as possible.

“The SDK itself we knew we were going to have to service very intense use cases, so we took our time in building a very, very solid, robust, enterprise grade-product,” he said.

“We knew we were going to service very large customers and we had a vision for our technology to become the new standard in location services as a whole. We needed to build it right the first time. So it took us a good year of engineering to build it.”

“What we have now is an SDK that delivers incredible precision, but enables us to service incredible scales as well,” he said.

“There’s no limit to the amount of locations that can be set, and currently we can support over 100 million smartphones using the technology daily before we start scaling up.”

“We've de-risked our corporate customers by ensuring the technology is incredibly secure, with bank-level encryption and private hosting environments,” he added.

“We eliminate the privacy risk from using our technology because we structured it, in conjunction with a former privacy commissioner of Australia, in a way where we don't track end users at any given point or record any personal information about them.

“At the moment it’s Android and iOS native apps can integrate the SDK, but we're looking at incorporating hybrid platforms as well — things like [Appcelerator] Titanium,” Thavarajah said.

“We also have the ability to port it over to other platforms but we just really haven't had any commercial demand as of yet,” Eldic said.

The infrastructure is provided and managed by Rackspace. In addition to dedicated servers, Bluedot uses managed instances of MongoDB through the hosting provider’s Object Rocket platform.

“From the commercial side it was absolutely imperative to provide a very secure yet scalable solution for our customers,” Eldic said.

“If you look the traditional hybrid-based setups, they just don't scale well and they're quite expensive. Alternatively, if you're looking pure cloud-based solutions there is a lack of security — you really have very little control over what happens with your data.

“What we managed to do with Rackspace is find a hybrid solution which let us leverage some of most advanced technologies in databases [and have a] perfect hybrid between private, single tenanted infrastructure, where all of our data is secured and only we have access to it.

“At the same time we managed to load test even our initial set up at 100 million API calls a day. Which just beyond excellent when it comes to scale.”

Thavarajah said that Bluedot plans to replicate its infrastructure in Rackspace’s US and European data centres soon.

“A large portion of our market is in the US, and also we have customers in Europe,” Eldic said.

“We've had location-based triggers occurring in Nepal. It's everywhere across the world. So having a partner that could provide great response times in pretty much

any region while still maintaining the security and the low cost aspect has been a great outcome.”

Eldic said Bluedot has in excess of 500 customers on its software-as-a-service platform.

“We've grown it quite quickly with a lot of organic uptake, but where we focus commercially lately is very much on enterprise because the technology has been built towards it and that's where there's the biggest transformational experience can occur when it comes to very large enterprise applications.”

Although the company started in transport, the property industry in particular has emerged as a key market for the company.

Property companies can use the product without having to deploy hardware at locations they manage.

“It enables property listing portfolios to understand when a user has walked up to the front door or the front yard of the property, rather than its general vicinity, and deliver content and services when users walk up to that location,” Eldic said.

“So you can register a user’s interest to an agent and record that they've actually been to the property for analytical purposes. [Companies] can measure for the first time ROI on properties and tell their customers, the property owners, how their property is performing, how many people have visited a property.

“And at the same time they can deliver content such as home loan calculators, removalist services, or any other value-added services to their customs when they reach their property.”

Eldic said that Bluedot continues to expand its platform.

Recently it added ‘geo-lines’. Previously a user of Bluedot’s platform would typically access a map and draw outlines of geo-fenced areas that they could then link to an action (or alternatively do the same through direct API calls and bypass the Web-based administrative UI completely).

“We've pretty much eliminated geo-fences and areas as a concept; we pretty much no longer need them,” Eldic said.

“We can set a single, infinitely thin line that acts like a tripwire, and when a user walks across it, you can trigger any action within the phone.”

Bluedot has primarily been used for outdoor navigation, though indoor Wi-Fi based location is possible. However, Eldic said that the team was working on integrating support for Bluetooth beacons to offer more finely grained indoor tracking.

The company has periodic “innovation weeks” where employees are free to work on anything, Eldic said.

During a recent innovation week, one of the team members worked on getting Bluedot working on non-smartphone hardware, potentially allowing applications such as freight tracking.

Another project during the week was working on integrating support for one-touch payments and wearable devices.

One of the next key steps for the startup is creating an advanced analytics platform that can pull in external data sets and combine with anonymised location data, Eldic said.

“Everything from weather data, average urban income and density, vegetation coverage, finance and mortgage patterns — anything you can really imagine,” Eldic said.

“What we can do then is go back to our client businesses and say, ‘Well when the weather drops by two degrees and the RBA lowers rates and in a location that's close to a McDonald's, this is how these changes affect your customers' behaviour on average.’”

The analytics platform will offer the businesses to pre-emptively change how they interact with customers based on factors such as weather, he said.