

Notes from the front-line: Ian Helliwell, Senior Enterprise Architect, AstraZeneca



Ian Helliwell is Senior Enterprise Architect at AstraZeneca. He will be presenting in the Comms and Collaboration theatre at [Cloud World Forum](#) at the Olympia in London (24-25 June) on **Collaboration in the Cloud: Lessons Learnt from a Multinational**, covering:

- Understanding the experience of moving to a collaborative cloud in a large enterprise
- Overcoming obstacles to opening up systems and openly sharing
- Identifying and breaking down behavioural challenges
- Leveraging the advantages at the end of the implementation journey.

We took a few minutes with Ian to talk about his career and thoughts on the Cloud market, covering the specific challenges of the pharmaceutical industry, some of the innovative projects being undertaken at AstraZeneca, and the status of Cloud in his market, compared to other industry verticals.

Firstly, we discuss some of the challenges of the pharmaceutical sector. What AstraZeneca aims for, compared to generic manufacturers, who take established off-patent drugs and market them as cheaply as possible, is the innovative specialist drug market. The challenge there is the length of time that it takes to get such a drug to market – “you get a 20 year patent on a new drug and yet it probably takes you at least 10 years to get it to market to go through all the clinical trials, effective medicine, the regulatory hurdles to get it to a point they can launch it to the market”. So these innovative drugs can be seen as very expensive, and AstraZeneca are therefore challenged on cutting costs down as much as possible, as well as on price, from the NHS or big healthcare providers in the US market, for example.

“So we have a big opportunity or a big challenge, whichever way you look at it, to try and make the best uses of the data and our processes to try and both cut down cost and also reduce those lead times”.

Another evolution that AstraZeneca and their pharmaceutical competitors are seeing is the degree of partnering in the industry. There are certain processes and products that other companies are better-placed to develop, rather than them being developed in house. “There are small startup pharmaceutical research companies, BioPharms, the University spinoffs, the ones who have the creative ideas to develop a new drug but just don’t then have the size and weight of the company to take that drug through to market”.

So they are looking at what is core to their business, and offloading anything that isn’t core to other organisations. From an IT perspective, a challenge of such partnerships is around sharing data easily across company boundaries. Speaking of data, another challenge is how to get the best out of their data. This is no longer just about information that they have within the company, but information that is available through other research organisations, academic institutions, and other published data.

“So it’s given a huge opportunity to use technologies and techniques for big data mining and to gather the intelligence from the massive amounts of data that this company has generated over many, many years”.

The amount of data generated for the pharmaceutical industry is only going to increase. There is therefore an opportunity to gather far more and far better patient-related data, with smart devices that patients can use to self-monitor, to help them administer their dosages, to record data. Previously the information that came back from the marketplace about the effectiveness of drugs was greatly averaged, but that data is becoming increasingly user-by-user specific.

Leading on from this, we talk about some of the innovative, exciting projects that are currently being undertaken at AstraZeneca. Many people see the pharmaceutical industry as being particularly advanced

in terms of IT and analytics, and these analytical models are helping scientists increase and improve the personalisation of medicine, looking at how a drug can be tailored to suit an individual rather than the attitude being “here’s a generic drug which everybody with that disease takes and hopefully it will have an overall good effect”.

In terms of projects that Ian has been involved in over the last couple of years, they have largely been about adapting the company to deal with new ways of working, and how they are externalizing a whole infrastructure. One which has recently been completed was to take 100,000 mailboxes in over 80 countries, on “a creaking old hybrid mail infrastructure”, and push them to the Cloud. Many companies face such a challenge, but a particular challenge in the pharmaceutical industry is that it’s a highly regulated, very structured business environment.

“Everything we do needs to be documented, justified, defensible, that’s the big word is defensible. We have to be able to stand by everything that we do”

Ian was the Information Architecture lead on the mail infrastructure migration to Office365 project, and worked very closely with (a) AstraZeneca’s legal function, and (b) Microsoft, to understand the massive legal implications of moving 100,000 mailboxes *and* their historical content, as they were moving across country boundaries and, in doing so, were also moving across legal jurisdictions. “And we have a defensible chain of custody from start to end and we can show absolutely who was able to do what across that migration path. Not the most technically sexy work in the world but really pushing ourselves and Microsoft to the limit of what can be done in this this space, on that level of scale”.

This leads us to talk about the status of Cloud technology in the pharmaceutical sector. Ian feels that it’s a very fast moving area, albeit with the requirements of a heavily regulated industry. Specifically looking at IaaS and PaaS “then those are relatively okay, as we’re used to offshore providers managing our infrastructure anyway”, and that moving to true Cloud providers (on a private or hybrid model) has been relatively successful, but where the industry needs to get better is in terms of SaaS. SaaS providers need to understand that the management of information and software hosted in the Cloud is a core part of AstraZeneca’s business processes. If that process is heavily regulated, they have to abide by the regulator’s requirements for how they manage that information.

“And we need them to be a lot more transparent than they are. It’s not good enough for us to say, “Oh, this data is in the Cloud.” We need to know a lot more about how it’s managed, who is managing it and we need those companies to self-assure against these regulatory frameworks”.

So the big opportunity for the pharmaceutical industry other regulated industries, is for SaaS providers to self-certify, to say to end users that they are used to working in their industry, they know what they need, and this is how they can help ensure conformity using their software.

The broader challenge from Ian’s perspective, for pharma companies as well as other large enterprises, is how to move completely to this new Cloud model. Multinationals like AstraZeneca are traditionally used to having a big firewall around the outside of the company, and they own and manage everything that sits inside this firewall. But they want to open this up, to adopt Cloud technology, with benefits around CAPEX vs OPEX models, partnering with external organisations and sharing data seamlessly. Their CIO is pushing towards this model for all the best reasons, and they’re not unique, it’s the same for many multinationals.

“We need to work out how the hell we are going to take 30 years of legacy and move it culturally as well as technologically into the Cloud”.

With this in mind, something Ian is particularly looking forward to at Cloud World Forum is meeting other people from large organisations in different industries, who face similar challenges.

“I want to understand what’s being developed - what’s being developed to help that transition, not just ‘here’s the new shiny stuff up in the Cloud’ but are the techniques, here are the services; the things that will help organizations like AstraZeneca adopt Cloud technologies to a massive scale”.

You can join Ian at [Cloud World Forum](#), and take advantage of all the knowledge and network opportunities presented by EMEA’s only content-led Cloud exhibition. [Visit the event website to book your place.](#)